

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

TRUSTEES

OF THE

WORCESTER STATE HOSPITAL (Insane)

FOR THE

YEAR ENDING NOVEMBER 30,

1939

DEPARTMENT OF MENTAL HEALTH



PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE  
550, — 9-40. Req. P. 126.

OCCUPATIONAL PRINTING PLANT  
DEPARTMENT OF MENTAL HEALTH  
GARDNER STATE HOSPITAL  
EAST GARDNER, MASS.

FEB 5 1941  
WORCESTER STATE HOSPITAL

Post Office Address: Worcester, Mass.

BOARD OF TRUSTEES

WILLIAM J. DELAHANTY, M.D., *Chairman*, Worcester.  
ANNA C. TATMAN, *Secretary*, Worcester.  
JOSEPHINE R. DRESSER, Worcester.  
JOHN L. BIANCHI, Worcester.  
ROBERT R. PORTLE, Worcester.  
HARRY F. KENNEY, Boston.  
ROBERT A. BURNS, Auburn.

RESIDENT STAFF

WILLIAM A. BRYAN, M.D., *Superintendent*.  
WALTER E. BARTON, M.D., *Assistant Superintendent*.

PSYCHIATRIC SERVICE

WILLIAM MALAMUD, M.D., *Clinical Director*.  
LONNIE O. FARRAR, M.D., *Medical Director Summer Street Dept., Supervisor School Clinics*.  
WILLIAM L. HOLT, JR., M.D., *Psychiatrist in Charge of Female Reception Service*.  
BERTRAM T. SPIRA, M.D., *Assistant*.  
HAROLD GREENBERG, M.D., *Clinical Assistant*.  
BENJAMIN SIMON, M.D., *Psychiatrist in Charge of Male Reception Service*.  
S. HARVARD KAUFMAN, M.D., *Assistant*.  
MARTIN DOLLIN, M.D., *Clinical Assistant*.  
NORMAN D. RENDER, M.D., *Psychiatrist in Charge of Continued Treatment Service*.  
EREL GUIDONE, M.D., *Assistant*.

MEDICAL AND SURGICAL SERVICE

EMBRIE J. BORKOVIC, M. D., *Director*.  
WILLIAM FREEMAN, M.D., *Pathologist*.  
HANS MOLHOLM, M.D., *Assistant Male Medical Wards*.  
ELLSWORTH F. WAITE, M.D., *Assistant Female Medical Wards*.  
SIMON G. HAROOTIAN, D.M.D., *Dentist*.

RESEARCH SERVICE.

ROY G. HOSKINS, Ph.D., M.D., *Director*.  
ANDRAS ANGYAL, Ph.D., M.D., *Resident Director of Research*.  
JOSEPH M. LOONEY, M.D., *Director of Laboratories*.  
HARRY FREEMAN, M.D., *Internist*.  
CONRAD WALL, M.D., *Psychiatrist*.  
OTTO KANT, M.D., *Psychiatrist*.  
NATHAN BLACKMAN, M.D., *Psychiatrist*.  
MORTIN A. RUBIN, M.D., *Neurophysiologist*.  
DAVID SHAKOW, M.A., *Chief Psychologist*.  
GEORGE L. BANAY, Ph.D., *Medical Librarian*.

OUT PATIENT DEPARTMENT

ROBERT KEMBLE, M.D., *Director Child Guidance Clinic*.  
PHYLLIS D. SCHAEFER, M.D., *Assistant Physician*.  
JAMES WATSON, M.D., F.A.C.S., *Director Adult Mental Health Clinic and Supervisor of Family Care*.

NURSING DEPARTMENT

KATHARINE M. STEELE, B.S., R.N., *Superintendent of Nurses*.  
KATHERINE R. DICK, B.S., R.N., *Assistant Superintendent of Nurses*.  
EVELYN A. PETTEE, B.S., R.N., *Educational Director*.

CONSULTANTS

ERNEST L. HUNT, M.D., *Surgery*.  
ARTHUR BRASSAU, M.D., *Surgery*.  
FRANKLYN BOSQUET, M.D., *Surgery*.  
JOEL M. MELICK, M.D., *Gynecology and Obstetrics*.  
DONALD K. McCUSKEY, M.D., *Gynecology and Obstetrics*.  
LESTER M. FELTON, M.D., *Genito-Urinary Surgery*.  
JOHN O'MEARA, M.D., *Orthopedic Surgery, Roentgenology*.  
OLIVER H. STANSFIELD, M.D., *Internal Medicine*.  
ERWIN C. MILLER, M.D., *Internal Medicine*.

362.2M5  
W92r  
1939

P.D. 23

3

JACOB GOLDWYN, M.D., *Neurology.*  
 JOHN T. CARMODY, M.D., *Neurosurgery.*  
 JULIUS TEGELBERG, M.D., *Oto-laryngology.*  
 ROSCOE W. MYERS, M.D., *Ophthalmology.*  
 PHILIP H. COOK, M.D., *Roentgenology.*  
 THEODORE VON STORCH, M.D., *Encephalographic Roentgenology.*  
 GEORGE M. DIX, M.D., *Dermatology.*  
 OSCAR A. DUDLEY, M.D., *Epidemiology.*  
 HUDSON HOAGLAND, Ph.D., *Neurophysiology.*

#### HEADS OF ADMINISTRATIVE DEPARTMENTS

HERBERT W. SMITH, *Steward.* ANTON SVENSON, *Foreman Mechanic.*  
 MARGARET T. CRIMMINS, *Treasurer.* JAMES MISTARK, *Head Farmer.*  
 WARREN G. PROCTOR, *Engineer.* LILLIAN G. CARR, *Matron.*  
 BARBARA ESTES, M.S.S., *Head Social Worker.*  
 WANDA MISBACH, O.T.Reg., *Director of Occupational Therapy.*

#### TABLE OF CONTENTS

	Page
Trustees' Report . . . . .	4
Superintendent's Report . . . . .	5
Changes in the Staff . . . . .	6
Movement of Population . . . . .	7
Psychiatric Activities . . . . .	7
Report of the Clinical Director . . . . .	8
Shock Therapy Unit . . . . .	8
Hydrotherapy Report . . . . .	10
Occupational Therapy Report . . . . .	11
Nursing Department . . . . .	13
Chaplain . . . . .	15
Social Service Department . . . . .	16
Radio Department . . . . .	18
Medical and Surgical Activities . . . . .	19
Report of the Medical and Surgical Division . . . . .	19
Out Patient and Clinic Treatments . . . . .	21
Physical Therapy Report . . . . .	22
X-Ray Department . . . . .	22
Dental Department . . . . .	22
Laboratory Report . . . . .	23
Research . . . . .	25
Research Department . . . . .	25
Psychology Department . . . . .	29
Library Report . . . . .	32
Publication List . . . . .	34
Scientific Assemblies . . . . .	36
Educational Activities . . . . .	37
Student Training . . . . .	37
Teaching Appointments . . . . .	37
Nursing Education . . . . .	38
Community Service . . . . .	39
Prevention . . . . .	39
Child Guidance Clinic . . . . .	39
Mental Health . . . . .	42
School Clinics . . . . .	43
Division of Public Relations . . . . .	44
Administrative Activities . . . . .	45
Stewards' Department . . . . .	45
Farm Report . . . . .	46
Engineers' Report . . . . .	47
Maintenance Department . . . . .	48
Industrial and Sewing Rooms . . . . .	49
W. P. A. and N. Y. A. . . . .	49
Treasurers' Report . . . . .	50
Statistical Tables . . . . .	53

## TRUSTEES' REPORT

*To His Excellency the Governor and the Honorable Council:*

The Board of Trustees of the Worcester State Hospital respectfully submits the annual report of the hospital for the period of the year 1939.

This report will deal principally with the question of the imperative need for certain physical improvements in the institution. While the Board is thoroughly familiar with the necessity for economy in state government, it also recognizes the need for a proper protection of the investment which has been made by the Commonwealth in buildings and equipment. It would be derelict in its duty if it did not invite the attention of your Excellency to certain specific improvements which are needed to prevent deterioration and loss.

Before making these recommendations, the Board has considered each of them in the light of three main objectives:

1. Will the desired outlay contribute directly or indirectly to the recovery of patients?
2. Will this outlay protect an existing investment?
3. Will the expenditure result in direct saving for the Commonwealth?

Each of these recommendations has been measured by this rule of three and in each case the answer is in the affirmative.

### LAUNDRY BUILDING

The need for a new laundry building and equipment grows more acute with each passing year. The machinery deteriorates and is more difficult and expensive to keep in repair. A new building will contribute directly to the recovery of patients because laundry work is one of the most important forms of occupational therapy in the hospital. Standards of personal care of patients will also be raised through the elimination of delay in the return of body clothes now brought about by inadequate laundry facilities. The unhygienic conditions under which patients work in the present quarters reflect no credit upon the Commonwealth.

A new laundry will protect the existing investment which the hospital has in linen and clothing. Anything that lessens the wear and tear on textiles and prolongs their life will protect the money invested in them.

Similarly a new laundry will lead to an actual saving in wear on clothing and linen and in labor. There will be a direct saving in laundry supplies.

### STOREHOUSE

This is a section of a long-range program. When a new laundry is completed it would be economical to utilize the present building for the storage of goods. This can be easily done with a few changes such as cement floors, carrying the second story over the entire building and the installation of refrigeration and elevators.

Such a project would result in a direct saving to the Commonwealth. The hospital stores thousands of dollars worth of materials and supplies each year. The loss on these through improper storage is great. Increased efficiency with reduction of time of handling goods would result from the establishment of a central storehouse.

### FLOOR REPLACEMENT

A long-term program of floor replacement should be begun as soon as funds permit as part of a fire prevention program. Both the main building and Summer Street are fire hazards because of the wood floors. It would not be prohibitive in cost to tear out the floors in one building each year and substitute cement and linoleum floors.

This would be a direct contribution to patients through the reduction of the fire hazard.

### RENOVATION OF THAYER AND FOLSOM MEDICAL WARDS

This is an improvement that is badly needed. It is a sound investment because it will make a direct contribution to patient recovery.

It is proposed to install an electric elevator in the Thayer and Folsom buildings for the purpose of conveying patients from one sick ward to another. It is difficult to imagine a general hospital that must carry sick patients from one floor to the next by litter bearers. Moving seriously ill patients by hand up steep drafty staircases is a hazardous procedure that should be eliminated. These wards comprise a general hospital and to carry patients from one floor to another is an antiquated procedure that should be corrected.

Conditions on these wards are unsatisfactory in regard to food service. At present it is impossible to serve hot foods at the bedside. It is proposed to establish a centra



diet kitchen in the basement and distribute food in electrically heated carts which can be carried directly to the bedside by means of the proposed elevators.

These recommendations can be carried out as a five year program of betterment. It would be entirely impractical to attempt more than one at a time, but we would strongly urge that a start be made towards correcting the obvious deficiencies of the plant.

The Board wishes to again testify to its belief in the soundness of those policies of administration which place the major emphasis upon patient treatment, teaching, research and prevention. We believe that anything that will make these activities more efficient will return substantial dividends in the form of more patients recovered and discharged into the community.

The Board congratulates each and every employee of the organization for the loyalty and enthusiastic cooperation with the administration during the year. The high standard of integration and coordination of the personnel indicates the fine quality of leadership given by the Superintendent, Dr. Bryan.

WILLIAM J. DELAHANTY  
JOHN L. BIANCHI  
HARRY F. KENNEY

Respectfully submitted,  
ROBERT H. BURNS  
JOSEPHINE R. DRESSER

*Trustees.*

### SUPERINTENDENT'S REPORT

*To the Trustees of the Worcester State Hospital:*

As has been the custom for many years, the details of this report have been prepared by those members of the staff who have had the responsibility of supervising the several departments of the hospital. This procedure is the logical development of the plan of organization which has been characteristic of the institution many years. The delegation by the chief executive of responsibility and authority makes for a democratic spirit and a sense of partnership which serves to integrate the organization into one harmonious unit.

The department head and medical councils have functioned as advisory groups to the superintendent. These councils have met weekly for free discussion of hospital problems including the selection of new personnel. The appointment of committees for the purposes of handling routine problems and studying special projects has lead us further along the line as a true participative democracy. Studies are now being made regarding the feasibility of the creation of an employees' council. The membership of this council would be elected by the group of employees and it would act in an advisory capacity to the superintendent.

All of these changes in management of personnel follow the trend which is developing rapidly throughout the world. The relationship between management and worker is constantly undergoing readjustment and hospital organizations must recognize and meet this situation by the inauguration of a more liberal form of administration.

The policies of this hospital have been built around five major activities. These are:

1. Psychiatric Treatment.
2. Medicine and Surgery.
3. Teaching.
4. Research
5. Prevention.

The reports of the clinical director shows the general line along which treatment has been carried out. The staff is constantly alert to the necessity of keeping abreast of the times in the matter of new therapies. As a time-saving device the Journal Club which has been in existence for five years is useful. Staff meetings and ward rounds have been increased in number and the emphasis is constantly upon the therapeutic program for the individual patient. Every activity of the hospital is organized around this theme and the result of these efforts in the form of patients discharged is an important criterion of the professional efficiency of the staff.

The detailed report of the chief of the medical and surgical service indicated the vast amount of work carried on. It is becoming increasingly apparent that the relationship between the psyche and soma is of the greatest importance in elucidating the problems of psychiatry.

We have completed the first year of an organized system of sick leave for employees. Our plan has been to grant twelve days of sick leave to each employee who acquired illness in line of duty who had been employed more than a year. The total cost to the

hospital for a year of operation was \$4,114.09. The expenditure has been justified because the good feeling engendered by the privilege has reflected itself in the relation of employee and patient. It is a direct contribution to patient recovery.

The educational program of the hospital has been elaborated and systematized during the year. In general this educational work has been confined to post-graduate instruction. The best contribution of the special hospital to all disciplines is in this field. Specialization should be built upon a basis of general education. Mental hospitals have an important contribution to make in the fields of medical, social service, nursing, psychological and occupational therapy education. To make the contribution worthwhile the institution must have a real interest in education. This interest will find its expression in a well organized, formal system of instruction rather than merely permitting students to browse about the hospital to pick up what they can.

In the field of research the hospital has continued to work towards a better understanding of the causes and treatment of mental disease. The details of this work will be found in the report of the director of research. During the year fifty-two papers have been published. These papers sum up the results of the year's work.

To those philanthropic agencies which have supported these research projects financially, I offer my sincere appreciation and gratitude. Their support has made possible many lines of inquiry that could not possibly have been followed had this support not been available.

An organized, systematic approach on a broad basis to the problems of psychiatry will net rich returns in the form of better understanding of human behavior. Mental hospitals must take their part in this movement.

In the field of prevention, the hospital has developed a number of additional clinics during the year. The Child Guidance clinic has continued to function and the report of the director will indicate the volume of activity and the trend of the work.

The affiliation with the Worcester Welfare Department has been cemented into a worthwhile arrangement. The city department furnishes office quarters, clinical assistance and social workers. The hospital contributes the director, psychologist and social service leadership. The report of the director gives the scope of the activities.

A further development of preventive work has been the establishment of a mental health clinic at the Worcester City Hospital. Inasmuch as this is in the embryonic stages no report can be offered, but it promises to become a potent factor in the preventive policy of the hospital.

The community educational work carried on by the hospital is best illustrated by the fact that over 400 talks were given by members of the staff to lay audiences. A bulletin of speakers was prepared during the year and has been most useful in arranging for addresses and talks before lay organizations.

In conclusion, I wish to thank the Board of Trustees for the constant support and encouragement given me. I also wish to thank the officers and employees of the hospital for their constant loyalty and enthusiasm in carrying out the principles and policies of the institution. Finally I offer my sincere appreciation to the citizens of Worcester for their faith in the hospital and the unflinching support they have given.

#### CHANGES IN THE STAFF

In the past year the following changes have been made in the resident staff:  
*Physicians who left:*

Francis H. Sleeper, Assistant Superintendent to Assistant to the Commissioner, Inspector of Hospitals, the Department of Mental Health.

Dr. Ewen Cameron, Resident Director of Research to Head of the Department and Professor of Psychiatry Albany Medical College.

Morris Yorshis, Clinical Director to private practice of psychiatry in Haverhill.

Milton E. Kirkpatrick, Director of Child Guidance Clinic to Secretary of the National Committee for Mental Hygiene, New York.

Arthur J. Gavigan, Senior Physician to Assistant Superintendent at Medfield State Hospital.

Louis H. Cohen, Senior Research Psychiatrist to Clinical Director Manteno (Illinois) State Hospital.

Maurice Greenhill, Assistant Physician to Massachusetts General Hospital.

Frances Cottington, Assistant Physician to Bellevue Hospital, New York.

Robert Fuchs, Assistant Physician to private practice in Baltimore, Maryland.

Joseph B. Furst, Clinical Assistant to Iowa Psychopathic Hospital.

E. Morton Jellinek, D.Sc. Biometritian, to private consultation practice in New York City.

*Promotions:*

Andras Angyal, Senior Research Psychiatrist to Resident Director of Research.

Walter E. Barton, Senior Psychiatrist to Assistant Superintendent.

William L. Holt, Jr., Assistant in Child Guidance to Senior Physician in charge of Female Reception Service.

S. Harvard Kaufman, Clinical Assistant to Assistant Physician.

*New Appointments:*

William Malamud, Professor of Psychiatry Iowa State University Medical School to Clinical Director.

Benjamin Simon on leave of absence to National Hospital, Queen Square, London, returned to become Senior Psychiatrist in Charge of Male Reception Service.

Otto Kant, Associate Professor of Psychiatry — University of Tuebingen, Germany, to Senior Research Psychiatrist.

Erel Guidone, Medfield State Hospital to Assistant Physician.

Bertram Spira, Manteno State Hospital (Illinois), to Assistant Physician.

Hans Molholm, Habit Clinic, Department of Mental Health and Massachusetts General Hospital, Out Patient Department, to Assistant Physician.

Phyllis D. Schaefer, Greystone Park State Hospital to Assistant in Child Guidance.

Harold Greenberg, Private Practice Minneapolis, Minn., to Clinical Assistant.

Martin H. Dollin, Michael Reese Hospital, Chicago, to Clinical Assistant.

Alex A. Dickson, 3rd Class Engineer, retired on Dec. 22, 1938.

*Dead:*

Michael M. Jordan, Consultant in Neurology and Psychiatry. Died September 30, 1939.

#### MOVEMENT IN POPULATION

In 1939, 552 patients were admitted for the first time to a mental hospital. This was 10 more than were admitted on the same status in 1938. 221 patients were readmitted, an increase of 23 over last year. There were 516 discharged to the community, an increase of 53, more patients returned to their homes than in the past year. 100 of these were recovered, 283 were discharged as improved, 42 unimproved, 91 were without psychosis. 22 patients were transferred to other hospitals during the year. At the end of the year 2,419 remained in the hospital and 556 patients went on visit or otherwise absent.

The following mental disorders were most frequently seen amongst those admitted for the first time:

Psychosis with Cerebral Arteriosclerosis, 130	Syphilitic Meningo-Encephalitis, 33
Dementia Praecox, 124.	Senile Psychosis, 23
Alcoholism with Psychosis, 38	Manic Depressive Psychosis, 14
Without Psychosis, 14	Involutional Melancholia, 10
Psychoneurosis, 35	

Patients who were discharged came chiefly from the following groups:

Dementia Praecox, 82	Manic Depressive Psychosis, 20
Alcoholism with Psychosis, 36	Syphilitic Meningo-Encephalitis, 14
Psychoneurosis, 30	Involutional Melancholia, 9
Cerebral Arteriosclerosis, 23	

#### PSYCHIATRIC ACTIVITIES

In the following report the activities of the clinical psychiatric staff are presented as they are grouped under a series of primary functions leading toward one main goal. This goal may be described in a general way, as an effort directed toward combatting mental disease, not only in the individual patient with his particular disease process but in relation to the problem of personality maladjustments as one meets them in the community in general. This broadens the field of clinical psychiatry outside of the confines of the state hospital to include such problems as research into the nature and causes of these diseases, the preparation of suitably trained workers in the field and the institution of measures directed towards the prevention of such diseases. With this as the goal, the psychiatric activities have proceeded along the following lines.



I. *Adequate Care; Treatment, and Adjustment of the Patients Admitted to this Hospital.*

— The proper procedure along this line starts with an attempt to understand the nature and causes of the particular diseases which have necessitated the admission of the patients to the hospital. For this purpose, daily ward rounds are conducted on the various services of the hospital by the Clinical director, the regular staff of physicians on that particular service, the residents, internes and student internes in cooperation with social workers, occupational therapists and others who are concerned in the understanding and treatment of the patients. At these rounds all newly admitted patients are seen shortly after admission, a provisional diagnosis is made and some form of treatment is suggested on the basis of the apparent etiology. Further more intensive lines of investigation into the case are also indicated.

Twice a week, staff conferences are held for the discussion of cases presenting problems of particular interest, difficulties in diagnosis, teaching opportunities or research possibilities. The whole clinical staff and representatives of the nursing, psychology, social service, laboratory and other departments are present and are encouraged to participate in the discussion. Twice a week diagnostic conferences are held on the acute service to determine final diagnosis, and treatment or disposition of patients that have been in the hospital for three weeks. At these conferences the same group participates as on ward rounds. Four times a week conferences are held on the different services with regard to patients who have reached a point where changes in their hospital status or in the form of treatment must be made in view of the progress that has taken place in the course of the treatment.

Methods of treatment are instituted and administered wherever possible in relationship to the particular factors that have contributed to the development of the disease. The main trend is to prefer such methods as have been proven by experience to do most good and to subject the patient to the least danger. At the same time, however, the clinical staff is alive to new methods of treatment that are being introduced and applies these judiciously wherever they are indicated. Of the methods most frequently practiced, psychotherapy in its various forms, adequate medical and surgical treatment wherever needed, proper diet and hygiene are still proving to be of great benefit. In carefully selected cases the use of metrazol in the treatment of tension and stupor states and insulin in cases where the patients show a tendency toward reality distortion, has been of great benefit and is considered as worthy of continuation. Social therapy and Occupational therapy have come into prominence not only as auxiliary procedures in relationship to investigation and adjustment of the patient to the hospital, but also with a view toward the socialization of the patient and a preparation for his readjustment when he is ready to leave the hospital. The personality of the individual patient and his social background are taken as the most reliable criteria to determine what method or methods of treatment are to be used. Frequent consultations of the various members of the clinical staff and the other workers are held to determine new steps to be taken as the patient's condition changes in the course of his stay in the hospital.

II. *Educational Activities.*

III. *Research Activities.*

IV. *Prevention of Mental Disorders.* — The three essential psychiatric objectives listed above are properly within the sphere of influence of the Chief of Staff and have been carried out under his direction. They have been described in detail below under main sections of this report together with the work of related hospital departments.

*Shock Therapy Unit*

On August 7, 1939, a "Shock Therapy Unit" was established in what was the female occupational therapy shop in Folsom basement. This entire ward was turned into an insulin treatment room consisting of fourteen beds separated by a partition so that seven male and seven female patients could be treated simultaneously. The adjacent rooms were converted into a dressing room, store room, and dining room respectively.

The staff consisted of (1) a Junior Assistant Physician in Charge, (2) a Resident Physician, (3) two female nurses (one charge), (4) two male attendants. The charge nurse and one of the physicians made up the team that daily went to either the male or female wards to give metrazol therapy. Insulin was given every day except Saturday and Sunday. Metrazol was given on alternate days, three times weekly.

A course of metrazol consisted of from 15 to 20 convulsions with the rate and degree of improvement determining the number of treatments. In insulin therapy, a course



consisted of from 30 to 50 comas with the rate and degree of improvement again determining the total number of treatments. Exceptions, where patients received less treatments than the minimum required were rare.

All patients treated with insulin had schizophrenia and we find the following facts:

	Male — 17		Female — 18	
Average number of treatments per patient . . . . .		34		35
a. Least number per patient . . . . .		22		10
b. Greatest number per patient . . . . .		50		54
Average number of comas . . . . .		27		22
a. Most for single patient . . . . .		40		47
b. Least for single patient . . . . .		15		4
Average maximum dose . . . . .	190	units of insulin	116	units of insulin
a. Smallest maximum dose . . . . .	75	units of insulin	55	units of insulin
b. Largest maximum dose . . . . .	290	units of insulin	350	units of insulin
Average constant coma dose . . . . .	119.5	units of insulin	79	units of insulin
a. Smallest constant coma dose . . . . .		45		20
b. Greatest constant coma dose . . . . .		235		160
Part coma delirious . . . . .	5 — 30%	of all patients	6 (33 $\frac{1}{3}$ %)	of all patients)
Convulsions . . . . .	5 — 30%	of all patients	6 (33 $\frac{1}{3}$ %)	of all patients)
Primary method of relief of coma . . . . .		intravenous glucose		Sucrose intubation into stomach
Out of Hospital . . . . .	4 (36.4%)	of completed cases)	7 (52%)	of completed cases)
Advanced to parole ward . . . . .	1 (14%)	of those in hospital)	2 (33 $\frac{1}{3}$ %)	of those in hospital)
Same status . . . . .	5 (45%)	of cases completed)	5 (39%)	of completed cases)
Relapse of patient out of Hospital . . . . .	1 (25%)	of patients out of hospital)	1 (14%)	of patients out of hospital)

The method of treatment for both male and female patients was approximately constant and this is borne out by the statistics. However, the average maximum insulin dose and the constant coma producing insulin dose was higher in the males than in the female patients even though the extreme of dosages were greater in the women. Mild complications convulsions and deliria showed no sexual variation (30 to 33 $\frac{1}{3}$ %). In the greatest number of male cases coma was relieved by intravenous glucose, while in the women sucrose intubation was sufficient. More women recovered or improved (over one half out of the hospital and one third of the remaining on open wards) than the male patients (a little over one third out of the hospital and only one was transferred to an open ward). One male and one female patient suffered a relapse after leaving the hospital.

Since the advent of the centralized "therapy unit," 81 female patients have been put on metrazol therapy and 74 males. This makes a total of 155 patients for four months or an average of 38.75 new patients per month as compared to 24.6 new patients per month during the first eight months of the fiscal year. The 155 patients were composed of 8 manic depressive manics, 2 manic depressive depressed, 6 involutional melancholics, and the rest schizophrenics. On December 1, 1939, there were 15 female and 14 male patients still on therapy with their courses incomplete.

Tabulation of the results of the Metrazol Treatment brought out the following interesting fact:

	Number Treated		Male	Female
Average number of treatment per patient . . . . .			74	81
Least number of treatment per patient . . . . .			21.3	22.2
Greatest number of treatment per patient . . . . .			2	3
Average number of convulsions per patient . . . . .			15	14.5
Least number of convulsions per patient . . . . .			1	2
Greatest number of convulsions per patient . . . . .			30	63
Average maximum dose . . . . .			9.4 cc.	7.4 cc.
Smallest maximum dose . . . . .			4 cc.	3 cc.
Largest maximum dose . . . . .			15 cc.	12 cc.
Fractured Spines . . . . .			2	0
Fractured Hips . . . . .			2	0
Cardiac complications . . . . .			2	0
Major dislocations . . . . .			0	1
Pulmonary complications . . . . .			0	0
Out of hospital . . . . .			18-30%	18-27%
Advanced to parole ward . . . . .			13 (28% of remaining)	9 (20% of remaining)
Relapse of patients out of hospital . . . . .			1-5 $\frac{1}{2}$ %	2-11%

Method of therapy was kept constant as much as possible in both male and female patients but the female patients (as a group) received less than the minimum number of treatments established. The average number of seizures per female patient was 14 $\frac{1}{2}$  including a prolonged case of 63 seizures. It is interesting to note, with this in mind, that although the same number of male and female patients left the hospital, twice as many female patients returned after a relapse. Further, 28% of the remaining male patients were placed on a parole ward, whereas, only  $\frac{1}{3}$  of the remaining female patients were advanced to open ward privileges.

As for complications, only one was noted among the female patients (a slight edema of the ankles with no cardiac findings) of the 74 male patients, 8 received compression

fractures of the vertebrae, 2, fractured hips, and 2, acute cardiac decompensation syndromes.

There were no deaths from insulin or metrazol shock therapy.

Because of the multiple injuries to the back of the male patients the springs were removed from army style cots and the patient received treatment while lying on the flat mattress on steel slats. The hips were held to the mattress, the arms to the patient's sides, and the shoulders held to the mattress.

In conclusion, it is stated that during the year, 376 patients were treated with metrazol convulsive therapy, 155 or 41% during the last four months by the newly established treatment unit.

Because of the centralization of treatments, a greater number of patients may be treated and the physicians and nurses on the acute service are able to spend more time in personal care of patients on the ward. Too, efficient and concentrated observation is made on all shock therapy patients as a group, changes made and accidents guarded against. It is felt, also, that the results obtained indicate continuation of the unit because (1) "shock therapy" is not specific treatment but utilized only when indicated. (2) Since the establishment of the unit the acute service have increased their number of parole beds (3) it affords a centralized teaching unit for physicians and nurses, and (4) it enhances opportunities for research.

Recently metrazol convulsions have been given to patients in insulin coma. The course of this new form of therapy is not completed, but in the cases so treated good results are beginning to be seen where there had been no improvement during insulin or metrazol therapy alone. Five patients have been maintained on an improved level by weekly metrazol convulsions.

Plans are being made to start giving insulin to a picked number of cases by the intravenous method. It is hoped that this will shorten the length of the morning's course and reduce the general expense.

Insulin has been used in this hospital as shock therapy since March 1936. 50 patients have received this treatment alone. 33 or 66% are now at home. Metrazol has been in use since October 1937. 376 patients have received this treatment alone. 154 or 43% are now at home. Many of those who received the treatment were old and chronic cases. These remain in the hospital. Metrazol and Insulin both have been given to 81 patients and 52 or 63% of these are at home. Therefore 48% of the 507 cases who have received shock therapy are no longer in the hospital. These results are encouraging but are of administrative interest only as understanding of them awaits careful scientific scrutiny now in progress.

As a general principle insulin is being given to cases of dementia praecox of paranoid or hebephrenic type. Metrazol finds its greatest use in depression, manic excitements, involutional agitations and in Catatonic Dementia Praecox.

#### *Hydrotherapy Report*

The female hydrotherapy department is situated on second floor of the Hydrotherapy building. In the hydrotherapy suite we have 2 tub rooms, 2 pack rooms, a colonic room and a room for tonic treatments.

In the large tub room the treatment hours are from 8:30 to 11 a.m., 1:30 to 4 p.m., and 6:30 p.m. to 6 a.m. There are 12 tubs in this room, averaging 36 baths a day.

In the small tub room, the treatment hours are from 6:30 a.m. to 6:00 p.m. and from 6:30 p.m. to 6:00 a.m. There are 6 tubs in this room, averaging 12 baths a day. In all 1,279 female patients received 18,902 baths and spent 105,793 hours in the tubs.

Patients remaining in continuous baths all day are fed while in treatment. Patients in baths all night are rubbed with oil before entering tub.

There are 10 pack beds in the Pack Room. Patients go into pack at 8:30 a.m. and are returned to wards at noon. The afternoon patients are enveloped after dinner, and removed from pack at 4:00 p.m.

The night packs are put in at 6:30 p.m. until 6:00 a.m. They are repacked every four hours. Noisy patients are separated from quiet patients and removed to other pack room. 440 women received 5,359 wet sheet packs during the year and 13,010 hours of treatment.

In the colonic room we average 10 enemas and 5 colonics a day. The yearly total was 2,944 enemas and 1,107 colonic irrigations to 524 women.

The tonic suite consists of an electric light cabinet, vapor room, sitz tub and a large bath tub for various treatment such as tub shampoos, saline bath, immersion baths, etc.



There is a pack bed which is used for pack demonstrations for students. This bed is also used for hot and cold applications to spine, and wet mitten friction. There are 3 pails for foot-baths. There is a control table, for the needle spray, rain, fan, scotch and jet douches, tub and sitz bath, and wave spray. 327 women received 2,042 various types of tonic bath treatments.

Three ice-makers are in constant use. The ice is used for cold compresses to forehead on noisy, talkative patients. Ice collars, which are filled with a 5% solution of glycerine, are kept in ice-makers to freeze them.

The Male Hydrotherapy Suite is located on the first floor, and is separated from Quimby I disturbed admission ward by locked doors.

There are 2 tub rooms and 1 pack room. Each tub room, contains 4 continuous bath tubs and a control table for regulating the temperature of the water. Treatment hours are approximately from 7:45 a.m. to 11:00 a.m. as all patients are removed for dinner. Patients are returned to baths about 12:30 p.m. and removed at 4:00 p.m. In the evening patients enter bath at about 5:45 p.m. being removed at 11:00 p.m. No treatments are given after this hour. The usual daily quota is 24 baths. Last year 432 men had 7,617 baths for a total of 20,503 hours of treatment.

The pack room, located on the same floor contains 6 pack beds with rubber covered mattresses. Wet sheet pack treatments are given within the same hours as the continuous baths. Patients are packed in the evening only in emergency. The average number of treatments daily is 12 to 14. Last year 269 men received 3,176 pack treatments for a total of 6,745 hours.

A shower bath is located in the main corridor for use of patients upon removal from treatment and at other times.

The Male Tonic Bath Suite is located in basement of male bath-house. It consists of 2 rooms. In the first room is located an electric light cabinet, 2 reclining beds, for use of patients after treatments, also facilities for undressing and dressing patients. In the second room, there is a large bath tub for use in giving such treatments as Saline Baths, Tub Shampoos, Immersion Bath, etc. There is a large table covered with a rubber covered mattress, for use in giving such treatment as Hot and Cold Applications to Spine and Wet Mitten Friction. Also a Sitz-Bath Tub. There is a control table for the Needle Spray, Fan Douche, Jet Douche and Rain Douche. All ice used is brought from the icehouse to Tonic Suite. Last year 140 patients received 68 tonic bath procedures of various types.

With improvised equipment for the administration of Colonic Irrigations, 129 enemas and 26 colonics were given last year.

#### OCCUPATIONAL THERAPY DEPARTMENT

The past year has witnessed an almost entire change of personnel in this department. After four years as director, Miss Dorothea Cooke, left in August to become a member of the Staff at the Boston School of Occupational Therapy, and was succeeded by Miss Wanda A. Misbach. Miss Margaret Cullen and Miss Eleanor Sturtevant resigned to be married. Miss Marion Easton went to Louisville, Ky., to become Director of Occupational Therapy in Louisville City Hospital. Miss Alice Hussey, Miss Eleanor Perkins, and Mrs. Pearl Beaton Fielding filled resulting vacancies.

In spite of adjustment such widespread changes have necessitated the new personnel has carried on with the following goals in mind.

- a. Concentrated treatments for patients newly admitted or receiving shock and other therapies.
- b. Concerted effort to keep every patient possible engaged in some activity — the activity to be suited to the patient's needs and capabilities, and promotions to ensue as the patient is ready for them.
- c. More activities of a recreational nature to make for a more normal and better balanced program of work and play.
- d. Education of hospital personnel and students in our own and allied departments, or the Nursing Service.

1. Concentration of effort to newly admitted, and shock treatment patients has been facilitated on the female side by removal of the O. T. shop from Folsom basement to Washburn porch. This has meant that the approach to the shop is pleasanter, patients can be moved to and from shop with less risk of escape, aid is at hand in the event of any delayed reaction on the part of



treatment, patients are stimulated to interest in the shop by virtue of its visibility through ward windows and nurses find it easier to bring patients to a shop so located, hence attendance is more regular.

Classes have not been limited entirely to new admission or special treatment and research patients but have included, when prescribed, those from other wards on the Reception Services who needed the supervision and special attention such a class affords.

Promotion of the patient from the point at which he can be stimulated to productive activity, no matter how simple, to more difficult tasks as his powers of attention, concentration, coordination, judgment and responsibility increase has its beginning in the shop laboratories.

In the female shop classes an average of 82 patients were enrolled and 30 were promoted each month to responsibilities of an industrial placement. The male Occupational Therapy shop had an average monthly enrollment of 60 patients and promoted 19 to industrial jobs.

2. The principle of work fitted to the needs of the patients, as followed for the past five years, has been adhered to this year not only in shops but in making industrial placements.

In this *weekly conference* of the director and therapists from the Occupational Therapy Industrial Offices with the Assistant Superintendent have been valuable as a coordinating force between the administration and our department, and as aid in training new personnel.

An *improved record system* of line graphs showing number of patients in industry, pre-industrial centers or ward classes month by month and mounted in front office has helped in keeping physicians aware of their responsibility and in giving them a picture of what has happened on their respective services.

*Pre-Industrial centers* for those patients, particularly on continued treatment service, who are not ready to meet the demands of an industrial placement, but who do not require supervision of a graduate therapist in a shop, have been added to and expanded. In these groups under direct supervision of ward personnel, with suggestions, advice and help from this department, the goal is to establish working habits and induce productive activity looking toward promotion to industrial placement.

Such classes have been maintained on W2, P3, P4, Q2, and S4. The P3 class is now being reorganized as a Sanitary Goods Assembly Unit with P4 taking over more responsibility as a mending class. Specially constructed tables have been built for the P3 class, arranged in a hollow square to facilitate distribution of raw material and supervision of work. Sanitary pads, sponges and mouth gags will be made in this class with patients working in the manner of factory assembly line, receiving a stimulus from one side, performing her part of the task and passing it on to the next. It is hoped that we will thus make the withdrawn patient increasingly aware of others and the need of working with others.

Throughout the year on the Male service 70% of the men were in industrial positions; 5% were in the Occupational Therapy shop or pre-industrial center; 11% were occupied in nurses ward classes and about 14% were in ward classes on the medical service. On the female service 50% of the women were in industry, 10% in Occupational Therapy shop and pre-industrial centers, 24% in nurses ward classes and 16% in medical ward programs.

There were 3 pre-industrial centers on the female service. Patients were prescribed to attend class by the physician largely from the group unable to make an adjustment off the ward. It was possible to promote from 2 to 10 patients a month into industry each month. W2, a disturbed ward, produced 14,945 completed articles on an average of 1,245 pieces each month. P3, a continued treatment ward for luetics, produced 54,494 complete articles, a substantial portion of them sanitary napkins. P4, a continued treatment ward for very deteriorated patients, organized a group in October and averaged 1,118 pieces a month.

In July, 2 centers were established in male wards. Q2 averaged 274 articles a month and S4 sanded an average of 11 pieces of furniture a month.

*Ward classes* are conducted by ward personnel for those patients who are unprescribed to industry, Occupational Therapy shops, or other pre-industrial centers. Indirect supervision and materials are supplied through and records kept by this department.

It is the purpose here to stimulate activity and adjustment to work situations with promotion to pre-industrial centers or to industry.

A study made of these classes this year on the female wards shows a downward trend in amount of destructions as the amount of work goes up. This study will be continued in the next year.

*An enlarged program of recreation* is still needed. Until a recreational director can be added to the staff, this department continues to be responsible for dances, outdoors in summer and in Sargent Hall in winter. During the summer months one therapist and a student made rounds of ward groups outside helping organize games and other group activities. Teas and parties are given in the shops and approximately one afternoon a week is spent in group games instead of crafts. Calisthenic classes have been newly organized with patients prescribed to it by physicians. Two classes, one for men, one for women, each meet twice weekly under direction of a patient who has had experience and training in physical culture. Attendants or nurses from each service and a member of the Occupational Therapy Department help guide activity of class members.

This department has cooperated also with the music department in the art classes which have been held weekly and with the nursing service and librarian in bringing to the library in the evening groups of patients who are off the ward when the book truck makes rounds.

*Education of hospital personnel* is carried on through exhibits, charts and graphs, and lectures to residents, medical students, attendants and social service students. Each affiliate nurse spends a week in the department after instruction through lectures and demonstration, in conducting ward classes. Post-graduate nurses spend a month in the various branches of the department learning through lectures, observation and practice how they may use Occupational Therapy as nurses and cooperate with us for the ultimate gain of the patient.

Fifteen students from the Boston School of Occupational Therapy trained in the department during the past year.

#### *Summary of Industrial Placements Through the Occupational Therapy Department*

	<i>Female Reception</i>	<i>Female Continued Treatment</i>	<i>Male Reception</i>	<i>Male Continued Treatment</i>
Total Placements . . . . .	1,462	919	1,316	1,072
New Patients Assigned . . . . .	436		467	

Nurses ward classes on Female wards of the Reception Service completed 18,042 articles and on the Continued Treatment Service, 12,513 and Medical Service, 10,129 individual pieces.

#### *Summer Street Department*

One therapist runs the shop and makes the placements in industry at the Summer Street Branch. Only parole patients work in the shop because this therapist must be absent frequently on other duties.

Of the 582 average number of patients in residence at this branch, an average of 294 are assigned in industry, 117 work on the ward, 11 are in the Occupational Therapy Shop. The remainder fall into groups infirm or idle, of these about 40 are occupied to some extent in ward classes.

#### NURSING DEPARTMENT

Efforts were continued during the past year to continue a high standard of personal and psychiatric care for the patient. Daily detailed reports were examined by the Superintendent and carefully checked to insure accuracy. Each male patient averaged 3 shaves a week and a hair cut once every  $2\frac{1}{2}$  weeks. A total of 180,524 shaves and 26,643 hair cuts in the main and Summer Street division were necessary to give this service to an average of 1,180 male patients. A total of 1,225 females got 14,980 hair cuts and 11,399 waves at both departments, or an average of a hair cut a month and a wave every  $5\frac{1}{2}$  weeks.

*Housekeeping:*

The housekeeping supervisor has thoroughly housecleaned every ward in the hospital and the Hillside dormitory this year. This has aided the program of cleanliness and orderliness of the wards.

*Ratings of employees:*

The efficiency rating record sheets for graduate nurses and charge attendants have been revised to fit more satisfactorily those qualities we desire in people caring for mental patients. All employees on the nursing service continue to be rated once in six months.

*Outside maintenance:*

There is still need for an increase in the allowance for outside maintenance to relieve the overcrowding in the nurses and attendants homes.

*Continued Treatment Service:*

A marked decrease in the number of idle patients on this service has been accomplished with the continuance of the P3 industrial room, the establishment of a similar project on P4 and the chair caning project on the male service. These classes are conducted by the nursing service with suggestions and material from the Occupational Therapy service.

*Nursing staff activities:*

Staff nurses as a group have shown increased interest in professional activities outside the hospital. Large groups have attended district and State meetings. There have been a number of visits to other institutions and not only has the staff shown interest in these excursions but has related the knowledge gained to the nursing care of patients in this hospital.

Six of the staff nurses have taken courses in the Department of Nursing Education of Boston University. One has taken the course in public health at Simmons College.

*Recreation and physical therapy:*

Two very creditable entertainments were given this year in which the patients took a most active part. There were 255 ward parties held for the entertainment of patients, an average of 21 each month.

Calisthenics classes under the direction of a patient well trained in physical therapy have been conducted on the grounds during the summer and in the chapel in the fall with both male and female patients.

A literary club, organized among the patients on the Research Service, publishes a monthly newspaper which has proved of great interest to employees and patients. The stimulation of news gathering, the responsibility for organization and contact with others in selling the finished product has done much to bring the schizophrenic patient into a more healthy relationship.

## ANALYSIS

## Nursing Service Payroll Dec., 1938 — Nov. 30, 1939.

	R. N. — Registered Nurse.		Att. — Attendant.		LWON*	Other	Appointed	Transfer	Promoted		
	Resigned		Discharged								
	R.N.	Att.	R.N.	Att.							
January . . . . .	5	5	—	1	—	9	—	1	3	—	—
February . . . . .	4	2	—	—	—	1	—	1	7	8	—
March . . . . .	3	6	—	1	—	7	—	1	3	8	—
April . . . . .	1	9	—	—	—	6	1	3	3	13	—
May . . . . .	2	7	—	4	—	4	—	—	1	9	—
June . . . . .	3	13	—	—	—	5	—	—	2	15	—
July . . . . .	4	7	1	5	—	6	—	—	3	22	—
August . . . . .	6	1	3	2	—	4	—	—	3	9	—
September . . . . .	3	9	1	—	—	—	—	—	10	13	—
October . . . . .	8	18	—	3	—	2	—	—	11	14	1
November . . . . .	3	11	—	3	—	4	—	1	2	8	—
December . . . . .	5	3	—	6	—	4	—	1	2	8	—
Total . . . . .	42	86	5	24	—	43	1	8	48	139	1

\*L.W.O.N. Left without notice.

\*L.W.O.N. Left without notice.

	R.N.	Att.	TOTAL
Resigned . . . . .	42	86	128
Discharged . . . . .	5	24	29
L. W. O. N. . . . .	0	43	43
Other . . . . .	1	8	9
Total . . . . .	48	161	209
Appointed . . . . .	48	159	197



*Summer Street Division*

The Summer Street Department has cared for about 585 patients with 107 employees, including 12 Registered Nurses, during the past year.

"Continued Treatment" type of patients are cared for with the main objective being the best nursing and medical care, occupational and industrial therapy possible to give with available personnel.

About 80% of our patients have been engaged in industrial and occupational therapy, including a small class in the O. T. room for special training, and about 140 in daily ward classes.

A class in "Push Therapy" was started during the early summer, selected from patients who, because of apathy, inability, or for other reasons, were unoccupied. This group was given marching exercises and calisthenics with gradual induction into useful occupation. An employee was chosen as instructor with some assistance from the Occupational Therapist and Supervisors. Though he was untrained in occupational therapy, he has shown ability in interesting apathetic type of patients in occupation.

Twenty-nine different patients, some of whom were destructive of clothing and more or less untidy, have been in the class. One very destructive patient has been scraping furniture and has improved from his destructive tendencies. Another sews buttons on clothing, and another has taken up weaving which was his occupation years ago. Some have recently shown interest in looking at magazines, etc., all of which indicates that the most lethargic may be awakened with the right kind of persistent effort.

**RECREATIONAL ACTIVITIES**

In addition to daily exercise in the yard for those not enjoying parole privileges, and exercise provided in "Push Therapy" class, three wards in the male and female departments enjoy yard parole from among whom many are given city permits signed individually.

Dances have been held at intervals, six in all, including special features at holiday seasons. Nineteen band concerts have been given by the W. P. A. Band; thirteen entertainments were held by our Director of Music, and one each by St. Joseph's Choir Boys, and a group from the Lancaster Advent School. About 86 patients have been taken to moving pictures weekly during the moving picture season.

**RELIGIOUS INSTRUCTION**

Services have been held weekly by our Protestant and Catholic clergy and more recently services have been held by the Hebrew Rabbi weekly with much satisfaction to our patients and employees.

**CHAPLAIN**

The activities of the Protestant Chaplain may be conveniently classified under the following headings: (1) religious services, (2) ward visitation, (3) education, (4) community services.

Religious services are held each Sunday morning at the main hospital and at the Summer Street Department. The average attendance at these services is 300. A hymnal which has been especially prepared for use in mental hospitals is used in this service. The sermon, which is brief, seeks to relate religion to the needs and problems of the patients. These services offer a form of normal experience to which many of the patients were accustomed before entering the hospital and for which they feel a continued need after admission. Such services have a real value for many of the patients.

The admission wards of the hospital are visited routinely and new patients are seen shortly after their admission. The medical and other psychiatric wards are also visited routinely and individual patients are seen at any time when a visit is desired or indicated. Unhealthy religious attitudes are at times a factor which retards the recovery of a patient, and therefore, a process of religious re-education may contribute to the health of the patient.

The educational program of the Chaplain's Department is carried on both inside and outside the hospital. During the past year, five series of lectures, each series numbering five lectures, were given to various student groups in the hospital, such as the Occupational Therapy, Social Service, and nurses. These lectures were on the general subject of "Religion and Mental Health."

Closer working relationships were developed between the hospital and a nearby theological seminary and approaches have been made to certain foundations for support of a program for training of theological students in the hospital. It is our hope that this program may begin during the coming year.

The Chaplain has been active throughout the year building up the relationship of the hospital with the community groups, particularly with churches. He has acted as Secretary of the Department of Religion and Health of the Worcester Council of Churches, and is also a member of the Department of Religion and Health of the Federal Council of Churches, and of the Committee on Institutional Ministry of the Massachusetts Council of Churches. In cooperation with the Worcester Department of Religion and Health, the chaplain arranged and conducted two courses for clergymen at the hospital. One of these courses covered the general field of mental health; the other was in the area of marriage adjustments and mental health. Each course was well attended by clergymen from Worcester and vicinity. His community relationships have also included the Worcester Y. M. C. A. and Y. W. C. A. and the Worcester County Federation of Churches Women's Clubs. This latter organization, through its social service committee, has been active in visiting on the wards of the hospital, and a series of lectures was arranged for this group by the chaplain.

This report would not be complete without grateful acknowledgment of the financial support given by the Massachusetts Congregational Conference and Missionary Society to the work of this department during the past year. This support was much needed and was greatly appreciated.

#### SOCIAL SERVICE DEPARTMENT

For the first time in several years the Social Service Department has had no changes in its staff during the year. The effect of this unusual stability has been felt in an increase in efficiency, a smoother functioning of all parts of the work. More emphasis has been placed on improving techniques and on student training, since less attention had to be given to routine functions with which all were familiar. The necessary element of change, of new interests, new theories and practice was supplied as usual by the students.

These have come to us from the following schools: — Boston University, School of Religious and Social Work, one student during the winter, and one for two months in the summer; Simmons College School of Social Work, two students; Smith College School of Social Work, three students. These contributed by these students included a study of the history of psychiatric social work, and a study of patients placed in Family Care.

Two innovations have been made in the program of student training in the hospital. These include evaluation clinics for the social service students and a social service seminar on community resources. The evaluation clinics give the students and staff an opportunity to present cases from the point of view of social problems, to discuss them more freely and at greater length than can be done in the larger staffs. We also believe that the clinics will prove of educational value to members of the staff outside of the social service department, by giving them a clearer and more detailed picture of the case from the community's viewpoint.

The seminar on community resources is held in the evening and has been opened to medical students and internes, occupational therapists and nurses, on the theory that a wider knowledge of the community would be of value to all groups. Social service students in other agencies in the city have been invited to these meetings and have shown a great interest in them. At each meeting a worker from a local agency discusses the work of her particular field stressing particularly the ways in which a mental hospital may be of service to her clients, as well as how her agency may aid our patients.

In addition to these special classes for our own students, the educational work of the department has included forty-two lectures to nurses, medical students, occupational therapists and other groups. The Massachusetts State Conference of Social Work was attended by the entire staff, and the National Conference by one worker. Two workers attended the supervisors' conference at Smith College in July.

Statistics for the department are as follows:

New cases assigned . . . . .	1,899	Interviews held . . . . .	4,605
Historics taken . . . . .	314	Patients placed in family care . . . . .	152
Supplementary information secured		Patients status changed from family	
on other cases . . . . .	1,732	care to visit . . . . .	24
Investigations made . . . . .	1,896	Patients discharged from family care . . . . .	12

#### *Family Care:*

The work of this division has shown a steady growth: if at times it has seemed slow, we believe that such progress was the best course, as homes must be selected with great care and placements made after an exhaustive study of all factors in the case.



In analyzing the work we find that there are many details which take more time than one would suspect. Each patient referred must be interviewed, each case abstracted, relatives contacted, dental work arranged for to be completed before patient leaves the hospital and clothing ordered through clothing office. The physical and mental condition of the patient as well as what symptoms to be aware of are explained to the prospective caretaker before the actual placement is made. The best placement for a particular patient in light of the facilities and the problems involved is often difficult and sometimes seems impossible of solution.

Five of our 52 homes are located 45 miles from the hospital, the others are within a 28 mile radius. During the past year 132 homes were investigated, out of which 26 were accepted. About 10 more applications were received which were not investigated because they located outside of our hospital jurisdiction and would involve the expenditure of too much time and money.

The reasons for the rejection of so many homes are varied — such as — not adequate quarters, unsatisfactory references, lack of real interest and understanding of applicant, other boarders or state wards in the home, and often the demand for more than \$4.50 for patient's board and room. Although the legislature has recently passed a bill to increase patient's board from \$4.50 to \$6 a week, we have been unable to comply with this ruling because at present no appropriation has been made to allow for this increase.

For every home investigated there are at least three personal calls made, interviews with other social agencies to whom applicant may be known and numerous letters sent. The home is visited several times before it is accepted and after the first placement frequent visits are made to the new home. To secure our new homes advertisements have been inserted in the daily papers of Worcester and surrounding towns. Several lectures have been given by the workers to organizations and clubs stressing the needs of family care homes and their value to patients, hospital and community.

Supervision is carried on regularly at least once a month, when workers make a careful study of the patient and his adjustment. In addition there are special visits made at the request of either caretaker or patient when some problem has arisen in which advice and guidance is needed. Many times it is necessary to return the patient for appointments with the dentist, chiropodist, or to different clinics.

When the status of a patient is to be changed from family care to visit or discharge the worker first investigates all possible resources and determines what plans in her judgment will be best for the patient.

Visits made during the year by the social workers are 1,863 to patients, 113 to relatives, 264 to others in connection with family care homes — total 2,240.

There were 113 patients under state care and 33 on private care as of November 30, 1939; and 49 changes of status in patients placed prior to 1939 were made as follows; 16 were returned for exacerbation of mental symptoms, 21 for physical illness; 3 were released on visit; 1 to relatives; and 2 found work. Seven patients were discharged, — 1 to old age assistance, 3 to public relief agency supervision, 2 to own families, and one into own care. Two patients escaped.

Of the 152 patients placed in 1939, 49 were returned to the hospital, 33 for mental conditions and 16 for physical disease. 21 were released on visit, 8 to relatives, one to own care and a job, 12 to public relief agencies. Five patients were discharged, one to family, two to relief agencies, one to own care and one to another hospital. There was one escape.

*Ages of Family Care Patients*

Number of patients between ages of:							
Years		Number		Years		Number	
20-30	. . . . .	12		50-60	. . . . .	40	
30-40	. . . . .	13		60-70	. . . . .	31	
40-50	. . . . .	30		70-80	. . . . .	20	
Total							146

*Diagnoses of Family Care Patients*

General paresis	. . . . .	4
Alcoholic psychosis	. . . . .	7
Psychosis with cerebral arteriosclerosis	. . . . .	7
Psychoses with epilepsy	. . . . .	1



Senile psychosis . . . . .	4
Involuntional psychosis . . . . .	4
Psychoses with organic brain disease . . . . .	2
Psychoneuroses . . . . .	3
Dementia praecox . . . . .	76
Simple, 36	
Catatonic, 4	
Paranoid, 25	
Hebephrenic, 11	
Manic depressive psychoses . . . . .	19
Manic, 5	
Depressed, 6	
Circular, 1	
Mixed, 7	
Paranoia and paranoid condition . . . . .	7
Psychoses with psychopathic personality . . . . .	1
Psychoses with mental deficiency . . . . .	7
Mental deficiency without psychosis . . . . .	3
Undiagnosed psychosis . . . . .	1

146

#### RADIO DEPARTMENT

##### *Radio Activities*

Music for Church services; community sings at the main Hospital and Summer Street Department; musical assistance at ward parties and entertainments; musical instruction to individual patients on the recommendation of the physician; instruction to patients on how to operate the control board of our radio station WSH; the preparation and presentation special WSH programs including, "Notables in the News," "Airways to the Mind," and many other local features in which employees and patients participated, as well as Mental Hygiene propaganda; educational work consisting of lectures to various hospital groups, and visitations of outside groups to the Radio department; The supervision of patients who work there in the capacity of cleaning, typing, etc.; special radio features presented by the Radio Director, all these are routine activities of the Department which have been carried on this year as in previous years.

#### NEW PROJECTS

##### *Art Class*

With the aid of Mr. Paul Morgan, Jr., of Worcester and the cooperation of the Worcester Art Museum, we have been able to conduct an art class each week for patients. Over a hundred patients have had opportunity to express themselves through this channel. Because of the space needed for this class, with twenty to thirty patients working at easels, it was held in the Chapel. After an eight month experimental period, we were able to make some evaluations. Some of the therapeutic benefits derived from the Art class seemed to be, 1. the manifestation of an initiative (Shall I, or shall I not come to class? What shall I draw? What medium shall I use in drawing?) 2. The privilege of choice, (What easel shall I use? Shall I do still life or copy?) 3. The creation of a social situation where both the sexes meet, work, enjoy and at times lose themselves in their work. Self expression and the joy at creation of a creditable product were additional gains.

An exhibition was held of the more than 100 sketches done in class. It was attended by Art Museum heads and Hospital trustees and occasioned much favorable comment.

##### *Physician Calls*

Prior to this year Physicians and Staff members have been located in our Hospital by means of noisy bell signals. This year we have inaugurated the system calling doctor via radio. This system has proven very efficient. We estimated that we make between 400,000 and 500,000 calls per year.

The outside activities of the Radio Director have increased this year so that the present finds the Director as President of the Worcester Chamber of Music and Conductor of the Worcester County Light Opera Company. The musical demands from the outside toward our musical department is yearly increasing. This is encouraging because it proves that we are overcoming gradually that "bug bear" of the past, isolation. Calls

for the Director to administer the sea shore test for musical appreciation to outside problem children, are increasing.

#### PLANNED PROJECTS

A standard practice manual for the Department is now in the making. This manual will be complete in every respect relative to the Radio and Music Department. It will contain detailed instruction for the radio equipment, its use, its maintenance, and for future plans. It will contain detailed instruction for other activities of the Department as well as a five year plan. Other added features: New radio loud speakers are being monthly installed in our wards. At the close of approximately two years time, all old loud speakers will be replaced with new magnetic loud speakers.

Monthly additions to our phonograph record library will eventually give us a good standard collection of usable musical records.

During the coming year, a microphone will be installed with its necessary pre-amplifier in the Superintendent's office. This will enable the Superintendent to issue reports and special messages to the Hospital in times of need and emergency.

Plans are in progress to inaugurate rhythm bands on several of our disturbed and deteriorated wards. Once these are organized by the Musical Director, they will be conducted by ward attendants and nurses and even at times by some musical patients.

#### MEDICAL AND SURGICAL ACTIVITIES

This hospital is equipped with a separate medical and surgical unit of 287 beds for the study and treatment of physical diseases. The service is composed of ten wards; five male and five female; each ward reserved for a particular type of disease. For instance, one ward is reserved for infections, such as erysipelas, cellulitis carbuncles, furuncles, upper respiratory infections, pneumonias, etc.; another ward is reserved for surgical cases, for fever therapy, study cases, etc. One ward is reserved for tuberculosis. All diabetics and degenerative conditions are grouped on a fourth ward and finally one ward is reserved for the terminal debilities of old age and organic brain disorders.

Other medical activities under this division of the report are the various diagnostic and therapeutic clinics for patients and employees, the X-Ray and physical therapy departments, the dental department and the hospital laboratory.

#### *Movement of Population:*

There were 1,192 cases admitted to the service during the past year. The greatest number of cases were admitted during the months of February, March, April and May. During the year 477 males and 53 females were discharged from the service. Discharges from the service detailed as to physical condition are shown below.

*Table I*

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Recovered and improved . . . . .	452	510	962
Not improved . . . . .	15	9	24
Not treated . . . . .	10	14	24
Admitted for study . . . . .	65	64	129

#### *Deaths:*

There have been 192 deaths during the year; an average of 16 deaths per month. The average age of death is 68. Deaths in the younger age group were mostly due to tuberculosis and dementia paralytica, the remaining few from various diseases. In spite of the fact that the incidence of infections (carbuncle, furuncles, erysipelas, etc.) is high, it has not been a major factor in our mortality. This is also true of the older group of patients. There have been 47 deaths due to bronchopneumonia, all in elderly patients who showed various degrees of arteriosclerosis. In 34, arteriosclerosis was the principal cause of death. Other patients listed as dying as the result of coronary sclerosis, coronary thrombosis, cerebral hemorrhage, cerebral thrombosis, hypertensive heart disease, chronic nephritis (not pyelonephritis) rupture of abdominal aorta, etc., could be included as deaths due to arteriosclerosis. There were 11 deaths, or 5.7% of the total group, resulting from lobar pneumonia. This is a very satisfactory figure especially since many patients were quite old. One was below 60 years of age (56), few were in their 60th years, and the rest, comprising the majority of the group, were in their 70th and 80th years. There were 16 deaths from general paresis and their average age was 55.5 years. Malignant growth, grouped under cancer, was responsible for 10 deaths.

There were 5 deaths due to tuberculosis and these comprise our younger age group. There were 6 deaths due to pyelonephritis. Coronary occlusion and coronary thrombosis were responsible for 4 and 3 respectively; generalized arteriosclerosis was an important factor in these cases. The remaining deaths were due to various causes in many of which generalized arteriosclerosis was a contributing factor. There were 101 (52.6%) autopsied cases during the year; and 32 medico-legal consultations held during the year.

From November 1st, 1938 to November 1st, 1939, the following Clinico-Pathological Conferences were held:

<i>Psychosis</i>	<i>Medical Disease</i>
I. Acute alcoholic	Benign nephrosclerosis
II. Friedreich's ataxia	Subdural and intra-ileum hemorrhages.
III. Catatonic dementia praecox	Diabetes mellitus
IV. Alzheimer's disease	Gamma streptococcic bacteremia.
V. Huntington's chorea	Syphilis
VI. Acute encephalitis	Hydromyelia
VII. Paranoia	Hemolytic streptococcic bacteremia.
VIII. Traumatic psychosis	Pulmonary and renal abscesses
	Staphylococcic bacteremia.
	Generalized arteriosclerosis.
	Bronchopneumonia with empyema.
	Cystadenoma of pituitary with intra-neoplastic hemorrhage.
	Hypostatic pneumonia.
	Repeated cerebellar-pontine hemorrhages.
	Bronchopneumonia.
	Fractured skull with subdural hemorrhage and operation therefor.
	Bronchopneumonia.

#### *Consultations:*

The following table lists the number of examinations made by consultant specialists.

<i>Table II</i>			
Eye . . . . .	86	Medical . . . . .	9
Ear, Nose, Throat . . . . .	38	Orthopedic . . . . .	15
Gyn and OB . . . . .	20	X-Ray . . . . .	1,890
General surgery . . . . .	50	To Pondville Cancer Hospital . . . . .	14
Neuro surgical . . . . .	19	Others . . . . .	11

#### *Obstetrics:*

During the fiscal year there were 7 deliveries, this includes one set of twins. There were 6 female and 2 male infants. In this group there were no premature babies and there were no infant or maternal deaths.

#### *Surgery:*

During the year as tabulated below 87 surgical operations and 1,020 minor surgical procedures were carried out.

TABLE III  
*Major Surgical Operations*

1. Craniotomies . . . . .	13	7. Hysterectomy and other female surgery . . . . .	5
2. Hernia repairs (uncomplicated and strangulated) . . . . .	11	8. Cataract surgery . . . . .	4
3. Saphenous vein ligations . . . . .	10	9. Exploratory laparotomy . . . . .	4
4. Hemorrhoidectomies . . . . .	9	10. Appendectomies . . . . .	4
5. Mastoidectomies . . . . .	5	11. Amputations . . . . .	3
6. Hip nailing . . . . .	5		

#### *Other Types:*

Ventriculogram, 1; abortion, 1; removal cervical stump, 1; cystotomy, 1; fixation of tendon leg, 1; removal foreign body in stomach, 1; patella suture, 1; resection rectum, 1; removal of recto sigmoid and colostomy, 1; rib resection, 1; perineal repairs, 2; nasal sinus surgery, 2. Total, 87.



*Table IV*  
*Minor Surgery*

1. Lumbar punctures with readings . . . . .	189
2. Injection of varicose veins . . . . .	277
3. Incision and drainage . . . . .	186
4. Suture of lacerations . . . . .	171
5. Removal of foreign bodies . . . . .	9
6. Encephalograms . . . . .	21
7. Excision of tissue . . . . .	20
8. Examinations (sigmoidoscopic, bronchoscopic, etc.) . . . . .	17
9. Immobilization of limbs . . . . .	36
10. Biopsies . . . . .	5
11. Dental extraction under anesthesia . . . . .	5
12. Reduction of fractures and dislocations . . . . .	7
13. Tonsillectomies . . . . .	4
14. Aspirations (joints, hydrocele and abdomen) . . . . .	15
15. Artificial pneumothorax . . . . .	50

*Other Types:*

Dilatation and curettage, 1; phlebotomy, 1; removal hip nail, 2; reopening wounds, 1; transfusion, 1; repair of tendon sheath, 1; cystoscopic and pyelogram, 1. Total, 1,020.

*Table V*  
*Surgery on Employees*

During the past year, 40 surgical procedures were carried out on employees as follows:

Incision and drainage . . . . .	7	Suture of lacerations . . . . .	3
Reduction and immobilization of fractures . . . . .	6	Lumbar punctures . . . . .	6
Aspiration of body cavities . . . . .	4		

*Others:*

Appendectomy, 1; avulsion of nail, 1; circumcision, 1; dilatation and curettage, 2; sinus, 1; hemorrhoidectomy, 1; myringotomy, 1; mastoidectomy, 2; removal of foreign bodies, 2; tonsillectomies, 2.

*Employees:*

Tabulation of the medical and surgical attention given to employees is listed below.

*Table VI*

Examined and treated at clinic . . . . .	1,437
Required hospitalization . . . . .	109
Required operation . . . . .	40
Total number of days on sick wards . . . . .	702
Farmers and food handlers examinations . . . . .	125

*Out Patient and Ward Dressings:*

12,937 dressings and treatments were handled by the nurse in charge of the outpatient clinic under the supervision of medical service physicians. All ambulatory patients receive this care in a central room that is a part of the operating room suite. Table VII details the procedures carried out during the year.

*Table VII*

Abrasions and lacerations . . . . .	2,558	Unna's Boots . . . . .	155
Furuncles and carbuncles . . . . .	1,237	Burns . . . . .	1,163
Infections . . . . .	3,161	Miscellaneous . . . . .	2,710
Ulcerations . . . . .	1,953		

12,937

29,705 dressings were done on the medical and surgical service to patients in residence there in addition to the above number.

*Special Clinics:*

To facilitate diagnoses, special clinics are held by physicians of the Medical Department to examine the eye, ear, nose and throat and also pelvic examinations are made on female patients. To effect economy of time and effort certain diagnostic procedures, namely, Wassermann and spinal tests are also handled in clinic style. In all 17,824 examinations and treatments were given in special clinics listed below:

Table VIII

Eye examinations . . . . .	899
Ear, nose, and throat examinations . . . . .	933
Gynecological examinations . . . . .	1,102
Luetic treatments . . . . .	8,829
Spinal punctures . . . . .	585
Wassermann tests . . . . .	1,393
Hemorrhoid, Hernia, and Varicose Vein examinations and treatments . . . . .	1,176
Smallpox vaccines . . . . .	379
Typhoid vaccines . . . . .	2,467
Others . . . . .	61
	<hr/>
	17,824

*Physical Therapy Department:*

Mr. Charles Keslake physical therapist left the hospital at the end of September and was not replaced by a Civil Service appointee during the remainder of the year. This curtailed greatly the work of the department. In November the very latest model fever cabinet and a diathermy machine was purchased to replace an antiquated apparatus that had been in constant use for 10 years in the fever treatment of mental disorders. During the year, a new sinusoidal and faradic generator was also secured to replace an obsolete model.

Treatments carried out in the department are given below:

Table IX

Baking . . . . .	2,551	Ultra Violet (water cooled) . . . . .	169
Diathermy (medical) . . . . .	500	Others . . . . .	38
Diathermy (surgical) . . . . .	20	Total treatments and tests . . . . .	5,878
Massage . . . . .	724	New patients during year . . . . .	396
Muscle Reeducation . . . . .	438	Total number of patients treated . . . . .	919
Ultra Violet (air cooled) . . . . .	1,438		

*X-Ray Department:*

An entirely new and modern X-Ray installation was made during the year. This necessitated closing the department for seven weeks beginning June 10th.

A rearrangement of the suite with attractive decoration now provides a waiting room, office and plate reading room, dressing room, and lavatory, operating room and a dark room. The very latest model X-Ray machine and dark room equipment as well as other accessories now make this department one of the finest in the State. The photographic section of this department has been moved to new quarters in the Howe building.

Mr. Edward Day left the department on August 3rd and on September 11th was replaced provisionally by Mrs. Sarah Simon former technician at the Massachusetts Memorial Hospital. To insure uninterrupted service and quality of help it is regarded as essential that the salary level of X-Ray technician be raised to the equal of that of laboratory or physical therapy technician in the hospital.

One student received training in X-Ray during the year. The report of the department's activities during the year, curtailed by the changes made appears below:

Table X

Patients examined . . . . .	1,890	Photographs patients . . . . .	60
X-Ray films used . . . . .	2,575	Films . . . . .	116
Finger prints . . . . .	49	Lantern Slides . . . . .	15
Foot prints . . . . .	7		

*Dental Department:*

Simon D. Harootian, D.M.D., assisted by a full time dental hygienist and three months during the summer by two dental internes, has administered efficiently to the dental needs of all patients. Examinations are made on all new patients and yearly check of all old patients. The department also controls dental supplies and insures dental hygiene through supervision on the wards of the hospital. This department has excellent equipment.

Table XI

Total examinations and treatments . . . . .	19,306
Total patients examined and treated . . . . .	5,810

Cleanings . . . . .	2,114	X-Rays . . . . .	631
Examinations . . . . .	5,810	Dentures numbered . . . . .	321
Extractions . . . . .	1,805	Sutures . . . . .	28
Fillings . . . . .	1,512	Fracture immobilized . . . . .	1
Plates . . . . .	47		

The Podiatrist saw an average of 73 men and 51 women each month. Corns, callosities, ingrown and thick nails and bunions were the chief ailments he treated.

#### LABORATORY REPORT

The work of the laboratory has been maintained at approximately the same level as for last year with nearly 5,000 examinations per month being carried out. The exact figure is 59,409 and some of the more interesting tests are given in the table below. During the year there were 192 deaths and 101 autopsies giving a percentage of 52.6. This percentage is somewhat lower than in some of our previous reports but is still a creditable showing. The monthly clinic-pathological conferences have been continued as in the past and have been well attended and have led to changes in procedures as a result of the information gained.

The work of training suitable students in clinical laboratory techniques has been continued and the graduates of the course have all been able to obtain positions. The school has received widespread acknowledgment and applications are received from all parts of the country.

The laboratory has been accredited by the American Medical Association for the training of pathological residents, and physicians who take their training in pathology here will now be able to receive credit by the various specialists' boards who require training in pathology as one of the essentials for admission to examinations.

Emphasis has been placed upon the question of disturbances in the metabolism of the sex hormones, and preliminary investigations appear to show that the patients are significantly different from normals, in that they do not excrete greater amounts of androgens after testosterone administration. A number of studies on the physiological changes produced by insulin and metrazol therapy in schizophrenic patients have been carried out, and also an investigation on the effects of diathermy on brain metabolism. This material is now being prepared for publication.

*Work completed during the year:*

1. A description of a new and improved method for determining spinal fluid protein. The method is simpler and more accurate than previous methods.

2. A paper obtained incidental to the introduction of phosphatase determinations, gives in condensed form the variations usually found in serum phosphatase.

3. A summary of the forty biochemical variables obtained on normal subjects during our investigations. It is the only compilation of its kind, giving values and variability, and should be helpful to investigators in general who use normal values.

4. This investigation was concerned with the lactic acid metabolism of 35 schizophrenic patients and 35 normal subjects. It shows that the patient is not as efficient as the normal subject since he produces a significantly greater amount of lactic acid per unit of work than the normal man. It also shows that the acid base equilibrium of the patient is not different from the normal, and that this line of investigation is not a profitable one to pursue. It also appears that the patients approach the normal in their carbon dioxide mechanisms as the result of exercise.

5. The changes in phosphorus mentioned earlier in this report.

6. A new method for making Globulin and Albumin determinations in blood serum with a comparison of the older method. The determinations are more reliable, can be run on as little as 0.2 ml of serum and take much less time than previous methods.

7. A critical evaluation of the Phytotoxic Index with reference to depressed patients and pointing out its limitations and defects. It was carried out in order to evaluate the test previously performed with schizophrenic patients.

8. The serum lipid levels of "calm" schizophrenic patients are lower than those of "excited patients" or normal subjects.



9. The results of the increase in serum lipid values as the result on insulin therapy. The "recovered" patients maintain their gains but the "non-recovered" patients tend to fall back to the initial level which was significantly lower than the control subjects.

10. A significant rise in Choline esterase occurs after insulin. The function becomes much more stable in the "recovered" patients but more unstable in the "non-recovered" group.

*Papers Accepted for Publication:*

1. Sex Factors of the Adrenal Gland — J. M. Looney, Endocrinology. A review paper pointing out the close relationship between sexual functions and the Adrenal Gland.

2. The Treatment of Pituitary Dwarfism with Growth Hormone. J. M. Looney, Endocrinology. This paper shows the effect of medication on growth and illustrates how personality traits may be altered by remedying the factors that single out a child as different from other children.

3. The Effect of Insulin on Serum Lipids and Choline Esterase Activity in Schizophrenia. J. Lab. and Clin. Med. L. O. Randall.

Essentially the same as above.

4. The Lipid Composition of Intracranial Tumors — L. O. Randall.

5. The Chemical Pathology of the Brain — L. O. Randall.

6. The Effect of Testosterone on Serum Lipids in Schizophrenia — L. O. Randall, J. Biol. Chem. This has been described above.

7. The Effect of Repeated Insulin Type Glycemia on Lipid Composition of Rabbit Tissues. Insulin treatments produced a small but statistically significant decrease in the phospho lipid and neutral fat content of the nervous tissues but no change in cholesterol. The adrenal glands were hypertrophied and showed a percentage decrease in ester-cholesterol and increase in neutral fats. The other components remained constant.

8. Influence of Insulin on Experimental Neoplasms. M. O. Lee, R. G. Hoskins, W. Freeman. Given at the Annual Meeting Asso. Study Int. Secretions, May 1939.

Extensive alterations of the ground floor rooms of the laboratory have begun in order to give more working space and relieve the over crowding. This was accomplished by taking one room in Washburn Ward and one Lincoln Ward room for Basal Metabolism rooms and by converting the old basal rooms into two large laboratories.

During the year a new research chemist was added to the staff, Dr. Alan Mather from Dr. Doisy's laboratory in St. Louis. He received his doctor's degree for work in the biochemistry of the sex hormones and will continue investigations in this field. Dr. Randall has resigned to take effect December 1, 1939, to accept a research appointment with Burroughs and Welcome Co., N. Y.

LABORATORY TESTS FOR YEAR OCT. 1, 1938 TO SEPT. 30, 1939.

Abstract of some tests from the grand total of 59,409 tests made.

<i>Pathology:</i>		fragility . . . . .	6
Autopsies . . . . .	101	Typings . . . . .	135
Rat autopsies . . . . .	288	bleeding and clotting times .	83
Tissue sections, post mortem . .	1,501	Endocrine Hitio, Bioassy Rats .	636
Tissue sections, research . . .	1,023	<i>Bacteriology:</i>	
Tissue sections, frozen . . . .	753	Smears for bacteria . . . . .	1,063
Tissue sections, surgical . . . .	228	Bacterial cultures . . . . .	655
Feces, blood . . . . .	175	Blood cultures . . . . .	70
Feces, ova and parasites . . . .	48	Sputa for T.B. . . . .	285
Feces, typhoid and paratyphoid .	37	Neufeld typings . . . . .	1,693
Feces, dysentery . . . . .	9	Vaccines . . . . .	30
Feces, mucous and starch . . . .	6	Plasmodia malaria . . . . .	32
Blood, differential counts . . . .	3,416	Agglutination undulant fever .	7
erythrocyte counts . . . . .	3,297	Animal inoculations Guinea pig .	15
leucocyte counts . . . . .	3,445	Rabbit . . . . .	41
platelet counts . . . . .	24	Rat . . . . .	2,292
reticulocyte counts . . . . .	19	Bacterial milk count . . . . .	360
hemoglobin . . . . .	332	Occult blood . . . . .	690
		Special bacteria . . . . .	77

<i>Chemistry:</i>	Uric acid . . . . .	211
Urine:	Vitamin C . . . . .	385
Urinalyses . . . . .	Phosphatose . . . . .	518
Nitrogen partitions . . . . .	Spinal Fluid:	
Quantitative sugar . . . . .	Cell count . . . . .	637
Blood:	Gold curve . . . . .	642
Albumin . . . . .	Protein . . . . .	644
Bromides . . . . .	Sugar . . . . .	436
Calcium . . . . .	Bromide . . . . .	10
Chloride . . . . .	Gastric Analyses . . . . .	107
Cholesterol . . . . .	Blood . . . . .	110
Cholesterol free . . . . .	Bile . . . . .	109
Choline-esterase . . . . .	Bromide . . . . .	7
Color index . . . . .	<i>Special Tests:</i>	
Creatinine . . . . .	Glucose tolerance . . . . .	94
Gases . . . . .	Ascetic fluid cell count . . . . .	26
Globulin . . . . .	Icteric indices . . . . .	102
Glutathione . . . . .	Vandenbergh . . . . .	99
Lactic acid . . . . .	Basal metabolism . . . . .	205
Lipoids . . . . .	Tissue respiration studies . . . . .	325
Magnesium . . . . .	Hormone extractions . . . . .	147
N.P.N. . . . .	Androgenic BioAssay . . . . .	17
Phospho-lipoids . . . . .	Haldane gas determinations . . . . .	29
Phosphorus . . . . .	Adrenalin determinations . . . . .	34
P.H. . . . .	Kidney stone analyses . . . . .	15
Total protein . . . . .	Schneider index . . . . .	13
Specific gravity . . . . .	Takata-Ara-Test . . . . .	4
Sugar . . . . .	and many others.	
Thiocyanate . . . . .		
Urea . . . . .		

#### RESEARCH

Psychiatry, as medicine in general, is still and perhaps always will be in the process of development toward a better understanding of the causes and treatment of disease. From this point of view research activities form an important and integral part of the work in clinical psychiatry. Systematic attempts are being carried out in the study of various aspects of this branch of medicine. Members of the staff are encouraged to proceed along some line of investigation at the same time as they are carrying on their daily routine duties. A number of such studies have been published and will appear in the bibliography attached to this report. At present a series of problems are being investigated. Some of the members of the clinical staff are working in close cooperation with those of the research division. Others are carrying on independent projects in the various phases of psychiatric medicine. Among these we mention a few of the more important ones: (1) the causative factors of involuntional mental diseases; (2) the psychopathological and neuro-physiological effects of drugs; (3) therapeutic and physiological studies in patients treated with insulin and metrazol; (4) the blood-cerebrospinal fluid barrier; (5) the effects of small doses of thyroid in treatment of chronic patients; (6) sodium chloride in the treatment of acute excitements; (7) the nature and etiologic factors in the psychoses of the aged; (8) language and thought disturbances in schizophrenia. The importance of such investigations as factors enhancing the progress of psychiatry cannot be emphasized too strongly, but they can only be satisfactorily followed under suitable conditions. There must be the necessary funds to obtain the apparatus and personnel, and there must be sufficient time for the members of the staff to apply themselves adequately to such work. In the latter case the increasing number of residents has been of great help in that it has released some of the more experienced clinical workers from some of their routine duties.

#### RESEARCH DEPARTMENT

A considerable part of the activity of the Research Service during the last year was devoted to the study of the effects of sex hormones in schizophrenia. This work is being carried out under the direct supervision of Dr. R. G. Hoskins, and all depart-

ments are contributing their share to this study. The endocrine preparation on which most work has been done during this year is Testosterone Propionate. The schedule consists of three six-week periods, one before, one during, and one following medication. The program includes the study of the following biochemical and physiological items: sex hormone assays on 24-hour-amount urine samples; basal oxygen consumption rate; glucose tolerance; uric acid and adrenalin determination in the blood; blood lipids; hematocrit determination; blood morphology; basal blood pressure and pulse; and tests for autonomic reactivity with nicotine, adrenalin, and cyanide. Continued observations on the behavior and mental status of the patients are recorded by the psychiatrists, and also a standardized rating is filed weekly by the psychiatrists. The battery of psychological tests used with the patients on the Testosterone study includes the Army Alpha, Thematic Apperception, Attitude-Interest, Play Procedure, Drawing, Aspiration, Social Situation, and a special association test containing sex-loaded words. The effect of the latter is studied by means of the galvanic skin response as well as the actual associations. In suitably cooperative patients electroencephalograms are obtained by Dr. Rubin. The biochemical studies, which form the greater part of this program, are reported in connection with the work of the biochemical laboratory.

Hormonal preparations other than Testosterone Propionate, the effects of which on schizophrenic patients are being studied, include various pituitary preparations, pregnant mare serum extract, and Stilboestrol.

Another group study which has been carried out is that in connection with the insulin and metrazol treatments. The purpose of the study is to discover prognostic and differential therapeutic indicators which would allow the prediction of the type of patient most likely to respond favorably to insulin or metrazol treatment respectively. A further aim of this study is to utilize the therapeutic responsiveness as one of the means of dividing the schizophrenic group into more meaningful sub-groups than the conventional sub-type classification. Each patient is subjected to two weeks' intensive study before and after medication. The clinical observations on the insulin cases are made by Dr. C. Wall and on the metrazol cases by Dr. B. Simon. The program includes studies of the following biochemical and physiological variables: blood minerals and choline esterase, hematocrit and blood lipids, blood morphology, blood circulation time, daily basal pulse rate, and tests with intravenous adrenalin. The main items of the psychological test battery in this study are the Stanford-Binet, K-R Association Test, Aspiration and Play Procedure.

Another cooperative study under the direct supervision of Dr. Hoskins was undertaken in order to determine how far an ameliorative therapeutic program may be worked out for old schizophrenic patients. Twelve patients around sixty years of age are the subjects of this study. The schedule includes a metabolic check-up of two weeks' duration, followed by a six-week period of treatment with such therapeutic agents as are indicated in the results of the tests. After the six-week medication period another metabolic recheck is done, after which the therapeutic plans are reconsidered. It is planned that the duration of study in each case should be about a year, consisting of alternate six-week treatment and two-week test periods. Psychiatric observations and weekly behavior ratings are made by members of the psychiatric department. The psychological examinations consist mainly of tests on memory and deterioration.

Besides the aforementioned collective studies, a number of individual investigations have also been carried out by the various members of the Research staff. Dr. Andras Angyal, in collaboration with Dr. Blackman, has studied the nystagmic response to rotatory and caloric stimulation of the vestibular organ in 58 schizophrenic and 20 normal persons. The variables studied were absolute number and average frequency of nystagmic beats

$$\frac{(\text{Number of nystagmic beats})}{(\text{Total duration of reaction})}$$

In response to rotatory stimulation they found a 21 per cent reduction of the absolute number and a 26.2 per cent reduction of the nystagmic frequency in the patients as compared with normal controls. In response to caloric stimulation the schizophrenics showed a 38.8 per cent reduction of nystagmic frequency and a 48.3 per cent reduction of absolute number of nystagmic beats. Besides the general reduction of vestibular reactivity a small group with particularly low responsiveness has been detected. It is noteworthy that all the patients who have the clinical syndrome previously described by Angyal belong to this very low group.



In previous years in a number of studies from our Research Service a distinct reduction of responsiveness to various physiological stimuli has been observed. Dr. Angyal, in collaboration with Dr. Freeman and Dr. Hoskins, made a theoretical evaluation of this fact, connecting these physiological features with the clinical symptoms of withdrawal.

Dr. Conrad Wall continued his follow-up studies on the adjustment of patients who recovered following insulin treatment and who were discharged from the hospital. Preliminary evaluation of the data gives promise that this work will be particularly informative as to the permanency of insulin recovery. Dr. Wall, in collaboration with Dr. Hoskins, studied the effects of Testosterone in a homosexual individual with acute psychotic episodes. The effects of the Testosterone were best revealed in the patient's phantasies which, concomitantly with the medication periods, turned in a more or less obviously heterosexual direction. Dr. Wall also studied the therapeutic effects of Diethylstilboestrol in 8 female patients suffering from involutional melancholia. In the majority of cases a more or less marked improvement in mental and physical condition was noted, and the results seem encouraging for the continuance of this experiment.

Dr. Otto Kant carried out an intensive catamnestic study on a large group of schizophrenic patients who have recovered and who have been living outside of the hospital for at least the last five years. Two hundred fifty such cases were contacted by letter and Dr. Kant succeeded in examining personally about 100 of these patients, in addition to collecting the information which could be obtained from the patients' relatives, friends and from various social agencies. The material has not been finally evaluated as yet, but various significant conclusions can already be made. It appears that a schizophrenic heredity definitely decreases the chance for recovery, while a manic-depressive heredity increases it. Extroverted pre-psychotic personality and psychogenic precipitating factors are favorable for the prognosis. Simple, hebephrenic, and paranoid types of schizophrenia are associated with an extremely poor prognosis. Dr. Kant also completed a study on the problem of differential diagnosis in schizophrenia. The significance of the various schizophrenic symptoms is discussed in the light of Dr. Kant's theory of stratafication of personality structure.

Dr. Nathan Blackman made an interesting experiment in group therapy with schizophrenic patients. As a result of this a literary club has been organized by the patients themselves, partially through their own initiative and partially through Dr. Blackman's encouragement. The group edits a monthly publication, "The Current," of which, to date, four issues have appeared, and several hundred copies of each issue have been sold by the patients. This method of occupational therapy, which lays particular emphasis on fostering the patient's initiative, is definitely useful in the process of socialization.

Dr. Blackman is also studying the capillaries of the nail-bed in schizophrenic patients and normal controls. The morphology of the capillaries as well as the rate of flow of blood are being observed. The results are not conclusive as yet but in some cases in the patients quite marked abnormalities have been observed.

Dr. Harry Freeman has been studying the respiratory sensitivity to varying percentages of  $\text{CO}_2$  (2% to 6%) to determine whether this function is altered in schizophrenia. Ten normal and ten schizophrenic subjects were tested. The factors investigated were respiratory rate, respiratory volume, heart rate, and skin temperature. Contrary to the findings of Golla, Dr. Freeman's data on preliminary analysis seem to indicate no difference between patients and normals.

Dr. Freeman, in another study in collaboration with Dr. Neustatter, aimed to remove the metrazol-produced fear reactions by preliminary induction of anesthesia with cyclopropane and nitrous oxide. The anesthetic agent completely removed fear of the treatment in the five patients so treated and did not seem to affect adversely the convulsive threshold.

Dr. Morton A. Rubin has been working on an encephalographic method of detection of cortical atrophy. The results obtained with this method are in fair agreement with the findings obtained by pneumoencephalography and thus this method, if perfected, may prove to be of considerable practical value. Dr. Rubin, in collaboration with Dr. Freeman, studied the effects of intravenously administered sodium cyanide on the brain wave pattern in a case of catatonic stupor and in a patient with narcolepsy. In these cases slow rhythms were found. This was attributed to depressed cortical activity, presumably present in this type of patient. Consequently an attempt was

made to produce such a cortical state experimentally. Anesthesia is known to depress cortical function and to produce slow-wave activity. Cyclopropane was chosen for the anesthetic, since it has a rapid induction period and recovery from its effects is also rapid. Sodium cyanide was given to 7 schizophrenic patients during light cyclopropane anesthesia, expecting to obtain the same regular, slow rhythms as in the stuporous catatonia and the narcoleptic under the influence of cyanide alone. In most experiments the cyanide was without effect. In those cases, however, in which it was possible to evoke a cortical response to sodium cyanide during anesthesia there was, contrary to expectations, an increase in the number of fast waves. These findings would indicate that slow rhythms do not necessarily imply depressed cerebral activity, but that the slow rhythm is a product of various factors at present not understood.

Working with the hypothesis that certain disturbances of affectivity in schizophrenia might be related to dysfunction of the hypothalamus, Dr. Rubin, following the suggestion of Dr. Hoskins and in collaboration with Professor John Fulton of Yale, has undertaken a study of the effects of surgically produced lesions of the hypothalamus in monkeys. These animals with bilaterally placed lesions of the anterior hypothalamus exhibited marked behavioral changes. They became "shy" and much easier to handle after operation, and once caught they made no attempt to escape. In one of three monkeys a clear-cut adiposito-genital syndrome developed. In another animal marked atrophy of the ovaries and adrenals was found on autopsy. The third animal had lesions in the posterior hypothalamus, and, in contrast with the other two monkeys, showed no atrophy of the gonads. Electroencephalographic tracings obtained from these monkeys before and after operation are still in the process of analysis.

On the basis of reports from the Armour Company of a hypothalamic extract which produced a state similar to catatonia in rats, at Dr. Hoskins' suggestions Dr. Rubin undertook to investigate the experimental potentialities of such an extract. So far, however, the tests have been confused by the action of the preservative that was used in the extract, hence no evaluation is possible.

During the year the biochemical laboratory, under the direction of Dr. Joseph M. Looney, has collaborated on the sex hormone study, the insulin-metrazol study, and in the study on old schizophrenic patients. Various chemical methods were tried for the estimation of estrogens but none of these were found to be sensitive enough to be used on the small amounts occurring in male urine. The method of chemical estimation has therefore been held in abeyance and the method of assay using spayed mice is being utilized. The use of the photoelectric colorimeter has been compared with the Oesting technique and this method has been adapted for use. For large concentrations it is more accurate than the Oesting method but it will not serve for very small amounts. Dr. Looney has also modified slightly the Oesting procedure so that it gives somewhat better results.

Miss Howe has been determining the androgen output of schizophrenic patients and normal control subjects before and after giving Testosterone. The results so far indicate a marked difference between patients and controls, the former not increasing their androgen output after medication while the latter do.

Dr. Mather has taken up the work of utilizing the photoelectric colorimeter for androgen assays and also is continuing the study of better methods of extraction. This investigation promises to be a valuable contribution to the sex-hormone field and to offer a basis of more certain methods for separating the various hormones. He is also making estimations of the estrogen output in the two groups, using the spayed mouse as the test object.

Dr. Randall has carried on a number of investigations of changes in body lipids under various experimental conditions. The results of these studies indicate that the lipid metabolism may be significantly related to the schizophrenic process. There is an increase in all lipid fractions except free cholesterol in patients when they are treated with insulin or metrazol. Further, these levels are maintained in the recovered patients but not in the non-recovered group. In the Testosterone-treated patients there is also an increase in the lipid fractions. Dr. Randall has also studied the changes in fat distribution on prolonged treatment with insulin, using rabbits for this experiment. A similar study of the organs of pituitary-treated and pregnant rabbits has been completed in collaboration with Dr. Graubard of Clark University.

Miss Small has carried on investigations on the effect of Testosterone on the organ weights of immature male and female rats. The uterine weight changes give a good



means of assay. A comparison with Oesting color units was not successful. Apparently the action of the color component is not the same as that of Testosterone. A further study is contemplated, therefore, of the effect of Androsterone rather than Testosterone. In connection with the general problem of vigor, she has also carried out an investigation of the effects of Stilboestrol on the activity of rats. A significant increase in activity was found during the period of injection.

Dr. Looney has devised a new method for the determination of serum albumin and serum globulin which has greatly simplified the methods of analyses now used, increase their accuracy, and cut the time required for an analysis from four to five hours to about ten minutes. The method makes use of the photoelectric colorimeter to measure the turbidity produced when a protein precipitant is added to serum. A protective colloid is added which holds the precipitate in colloidal suspension and gives a stable opalescent solution well adapted to measurement by the photoelectric cell. The total protein is measured by precipitating all the proteins with sulfosalicylic acid and the globulin estimated separately by precipitation with one-half saturation with ammonium sulfate.

Miss Walsh studied the comparative efficiency of the old and new methods for the determination of albumin and globulin. She has also made all analyses dealing with lactic acid, blood sugar, uric acid, and glucose tolerance tests in connection with the therapeutic studies.

Miss Dyer has been carrying out the determination on blood gases, and the determinations of total nitrogen, creatine and creatinine on the patients on Testosterone medication. She has also modified the method for the determination of magnesium so that it can be carried out using the photoelectric colorimeter. Using this method, she is investigating the magnesium metabolism of normal and schizophrenic subjects.

Mr. Romanoff has been carrying out estimations of choline esterase, which doubtfully suggest that Testosterone causes some increase in the choline-esterase content of the blood of patients under treatment but not in the normal subjects. He has also been studying the effect of Testosterone on the tissue respiration of rat organs.

All the analyses for such studies as required statistical treatment have been carried out in the Statistical Department which is at present under the direction of Mrs. Hazel Stone.

The activity of the Psychology Department which is under the direction of Mr. David Shakow is reported separately.

The papers written by the members of the Research Staff are incorporated in the complete list of publications from the hospital.

#### PSYCHOLOGY DEPARTMENT

During the current year the number of subjects studied and procedures pursued with them is given in the following table:

<i>Psychometric and Experimental Studies</i>		
<i>Hospital</i>	<i>Number of Subjects</i>	<i>Number of Procedures</i>
House Patients . . . . .	327	1,030
Schizophrenic Research Patients . . . . .	200	682
<i>Out-Patient</i>		
School Clinic . . . . .	268	279
Adult Delinquents . . . . .	21	66
Non-Patients (including Employees) . . . . .	191	316
	<hr/> 1,007	<hr/> 2,373

In the above figures is concealed work done with a variety of subjects and procedures. Besides the routine school clinic examinations and the psychometric investigations of new patients, there are included studies of nursing, attendant and occupational therapy personnel, and various out-patient groups such as prisoners coming under the Briggs law. Rotary scholarship applicants, under-age applicants for first grade. Experimental and therapeutic studies using many different techniques with special groups of patients selected by diagnosis, age or special conditions make up the balance. The latter studies will be discussed in more detail in the body of the report.



*Researches completed during year*

A. Thematic Apperception—Three researches on "Studies in the Use and Validity of the Thematic Apperception Test with Psychotic Subjects" were completed—two by Dr. Harrison and one by Mr. Rotter. The first—"Method of analysis and clinical problems" investigated the general clinical usefulness and validity of the test and reports the use of a semi-objective method of analysis which determined attitudes and conflicts as well as prevailing characteristics with a fairly high degree of validity. The second and third studies—attempts at quantitative validations against case history material and by the method of 'blind analysis'—corroborated the findings of the first study in a more quantitative way.

B. Validity of Imagery Testing—A study by Mr. Snyder who reorganized the items in the imagery test used by Dr. Cohen and examined 30 additional schizophrenics and 15 normals. The results of the previous study are not corroborated and it was felt that this device was not a valid diagnostic measure. It appeared rather to measure the degree of confusion of the associative processes and the patients' ability to concentrate.

C. Aspiration—A study of a group of normal subjects as control data for the determination of the relationship between responses in a new aspiration situation and personality characteristics. Relationships were found with position in family and various personality traits.

D. Tautophone—A study by Dr. Wood of a group of Schizophrenic patients and normal subjects with another set of stimuli for the tautophone. Some of the patients were from the original study. The effects of repetition after a short interval and the difference in pattern of response between the groups are in process of analysis.

E. Special case studies—Several cases were given intensive study during the year: among these was a 12-year old encephalitic boy with marked obsessive characteristics and a young man with mixed obsessive and schizophrenic characteristics.

*Researches in Progress:*

A. Insulin-Metrazol—There are two groups of studies in progress connected with the effect of these drugs.

1. Test battery—Continuation with the new insulin-metrazol group of the major items of the battery used for the last two years in the investigation of the effects of the drug: Stanford-Binet, K-R Association, Aspiration, Play Procedure. These items were found the most valuable in an analysis of the previous results for the prognostication before treatment of improvement. In separate analyses of two previous groups it was found that scores on these procedures above and below certain critical points prognosticated fairly accurately those who did and those who did not improve. The present study was intended as a further check on the results of the previous ones and should determine finally the validity of the findings which indicated that early deterioration seemed to be a factor of primary importance with relation to prognosis.

2. Metrazol and experimentally induced habit systems—An attempt by Dr. Rodnick to determine whether metrazol has a greater disrupting effect upon a more recently acquired habit system than on an incompatible older habit system. On the basis of 14 metrazol and 5 control subjects thus far obtained, the results indicate a greater effect of metrazol on the more recently acquired habit system.

B. Testosterone—In connection with this drug three major studies were carried out during the year:

1. Test battery—A revised battery of the tests used with testosterone patients during the last few years was adopted for the present group. This consists of: Army Alpha, Thematic Apperception, Attitude-Interest, Play Procedure, Drawing, Aspiration, Social Situation, and a special association test containing sex-loaded words. The effect of the latter is studied by means of the galvanic skin response as well as the actual associations. It is still too early to make any generalization about the findings for this battery.

2. Special Case Studies—Dr. Rosenzweig has continued work with five patients in which he follows personality changes closely during the periods of medication and rest.

3. Photoscope—Work has been started by Dr. Rosenzweig with a device which exposes pictures of varying degrees of sexual content. An experimental program has been organized from which it is hoped to be able to evaluate this device for measuring changes in sexual interest and the effectiveness of sex hormone medication.

C. Frustration and Aggression—Dr. Rodnick and Mr. Rotter have completed a preliminary study of eight normal subjects on the reactions to an experimentally induced frustrating situation. The reactions to the situation were studied by means of

the responses to the Thematic Apperception Test after success and failure. The results thus far indicate an increase in aggression after failure. It is now planned by Dr. Rodnick to continue the study with a group of schizophrenics.

*D. Substitution*—A study, in the preliminary stages, by Miss Bennett in which the attempt is made to determine whether interrupted ego activities are completed whether directly or by substitutes. This is to be compared with the trend found in previous studies of schizophrenics that they did not complete peripheral activities or did not accept substitutes for uncompleted activities.

*E. Old Schizophrenics*—A battery of tests is being given to old schizophrenics to determine present status and changes under treatment. In this connection the studies on memory and deterioration discussed below are of special significance.

*F. Memory*—A special study, part of the larger study of memory in the various psychoses, of memory in senile, arteriosclerotic and general paretic patients. Some additional cases of the former two are being added by Miss Ballou to the already existing material. This will make available data for comparison with the schizophrenics of long standing.

*G. Behavior Disorders in Rats*—Some preliminary studies of behavior disorders which follow on simultaneous rotation and noise. At present there are indications that the strain of the rat is important. If a strain where the disorder is more prominent becomes available, it may be desirable to pursue the experiment further.

*H. Development of new devices for study of personality functions*—Various workers of the department continued to interest themselves in the further development of objective devices for the study of personality. (This is aside from the work already mentioned on the Thematic Apperception Test.) There are:

1. *Non-verbal Absurdity*—Mr. Shakow and Miss Ballou have done some preliminary work on a test which seems to have potential value for the study of thinking disturbances.

2. *Maze and Block Tests*—Two tests of the performance type which Mr. Leverett has been particularly interested in developing. They are concerned primarily with the intellectual aspects of personality.

3. *Frustration Test*—A revision of Dr. Rosenzweig's F-Optionary, being an attempt to devise an easily available behavioral test of personality.

4. *Test Battery for Brain Injury Cases*—Mr. Klebanoff has been assembling the literature on the psychological phenomena in relation to brain injury with the purpose of organizing a battery of tests for diagnostic purposes.

5. *K-R Association Norms*—Mr. Berkeley has been experimenting with a new scoring system for the association test. This gives promise of more adequately distinguishing between schizophrenic and normal responses.

#### *Analytic Work in Progress:*

Work has continued on the tabulation and analysis of previous studies. The major advances which have been made during the year are:

*A. Memory studies*—Data on mnemonic functioning in schizophrenia and other psychoses, and in normal subjects of various age levels, has been tabulated and extensively analyzed.

*B. Stanford-Binet*—(1) The trends in a selected group of patients who had more than ten Stanford-Binet examinations over a period of ten years or so have been analyzed; (2) Tabulation of the qualitative responses on certain parts of the Stanford-Binet for purposes of comparison with normal subjects.

#### *Research and Analytic Work Planned for 1939-1940:*

For the coming year, besides the continuation of those projects already in progress the following program has been projected. The program is obviously too extensive for completion within a year but it is hoped to make substantial progress during this period. Three major fields of activity are involved: *A. Typing of schizophrenia*; *B. Study of the effects of drug treatment*; *C. Study of individual variability in schizophrenics.*

*A. Typing of Schizophrenia (Selection of Syndromes).*

1. *Selection by symptoms and characteristics*—Two major avenues of attack are possible here: By way of a study of (a) Therapeutic efficacy; (b) Functional profiles.

a. *Therapeutic efficacy*—Here schizophrenics will be separated according to the therapeutic efficacy of drugs such as insulin and metrazol in relation to the predictive power of the devices mentioned earlier, viz., Stanford, Aspiration, K-R, etc.



- b. Functional—These profiles are profiles of performance determined from a variety of psychological and psychophysiological characteristics studied during the present and in the past. They include performances on psychophysiological (galvanic skin response, autonomic stress), motor (speed, reaction time and reaction time set, learning), intellectual (Stanford-Binet, Alpha, Otis), and personality (Rorschach, Thematic, Tautophone, Association) functions.
2. Development of devices for the objective study of symptomatology—As part of the problem of the determination of the fundamental constituents of schizophrenia we have recognized the need for the development of objective psychological devices for determining symptoms and characteristics. The projected program in this respect includes two different aspects: (a) the continued study and development of devices for personality analysis; (b) the detailed study of the deteriorating process by objective means.
  - a. Objective devices—Work has been and will continue to be done on the development of the thematic apperception, tautophone, aspiration and photoscope because of their promise in this direction. In addition a study of brain waves in conflict situations is under consideration.
  - b. "Deteriorating" process—A rather comprehensive program of deterioration has been started which will consider, besides current material, the material collected over a period of ten years or so on the same patients. With respect to intellectual functioning the various psychometric data and the various studies of the thinking process (Ach-Sacharov, Wegrochi tests, etc.) will be used. With respect to emotional and motivational deterioration the work on aspiration-frustration and the various Lewin studies will be used.
- B. Study of the Effects of Drug Treatment—It is planned to continue the studies already described (under Researches in Progress) which are part of the insulin-metrazol and testosterone investigations. In the case of the latter it is planned to carry an additional patient in some form of psychoanalysis while he is being treated with testosterone.
- C. Individual Variability—Over the period of years there has accumulated a considerable body of psychological data about the same patient. Since, in relation to the study of deterioration, a good deal of this material will necessarily be gone over it is hoped to utilize the material for a detailed investigation into certain aspects of the problem of psychological variation in schizophrenia.
- D. Studies of Old Age—In relation to the studies of long-hospitalized schizophrenics a number of studies on the aged is in progress. Besides those already mentioned, a study of deterioration in non-schizophrenic patients of long standing is being undertaken.

#### LIBRARY REPORT

##### I. Medical Library

###### *Brief history of the Medical Library:*

The origin of the Medical Library goes back to 1833, the date of the founding of the Hospital. The first superintendent, Samuel B. Woodward, who was also the founder and the first president of the American Psychiatric Association, was a lover of books. From the foundation year on we find scattered reports of donation of books to the Hospital. However, no effort was made to organize a medical library (as we understand the term today) until 1896 when Dr. Adolf Meyer, the present incumbent of the Chair of Psychiatry at the Johns Hopkins University School of Medicine, was Clinical Director at this Hospital. Dr. Meyer gave the medical library considerable attention and it was at that time that it began to take shape along organized scientific lines. Through his efforts valuable files of German, French and Italian periodicals on psychiatry and neurology were acquired. These have formed the nucleus for the present medical library. This impetus carried over for some years after Dr. Meyer left and although the growth of the library was slow, steady progress was maintained until 1914 when the World War interrupted subscriptions to foreign journals and the library as a whole was somewhat neglected for quite a few years.

In the early 1920's, the progressive and efficient policies initiated by Dr. Bryan received considerable favorable attention and in 1927 the Hospital was chosen for establishment of a research unit by the Memorial Foundation for Neuro-Endocrine Research. In 1930 the Commonwealth of Massachusetts appropriated a special sum for research in Dementia Praecox to be carried out in conjunction with the Memorial



Foundation, and in 1934 the Rockefeller Foundation granted aid to the hospital for the continuation of this work.

Coincident with the growth of the research unit has been the reorganization of the medical library under direction of a full-time librarian. Dr. F. H. Sleeper, former Director of the Research Service, is primarily responsible for the reorganization. He was instrumental in collecting, collating and rebinding many hundred volumes scattered in the various departments of the Hospital. After the establishment of the Medical Library as a central unit, the monograph collections and periodical files continued to grow and many gaps have been filled as the years have gone by. In 1933 the library joined the Medical Library Association acquiring thereby a steady source of exchange material. The importance of the library as a tool of research is well recognized and it is believed that the present support will be continued.

*Activities during the year:*

*Periodicals:* Fully realizing the value of medical periodicals in connection with problems confronting the staff, the current policy is to maintain this division of library service at the highest level possible with resources available. We had 131 periodicals in 1939 as compared with the 126 of the previous year. Of this number the Hospital subscribed to 109, 2 were paid for by the Memorial Foundation for Neuro-Endocrine Research, 2 were donated by Dr. Bryan, 5 by Dr. Hoskins, 1 by Dr. Barton, 2 by Dr. Looney, 1 by Dr. William Freeman, and 9 came in free from institutions and scientific organizations.

Of these periodicals, 9 are in German, 6 in French, 5 in Italian and 111 in English.

*Circulation:* The Medical Library circulated 817 volumes in 1939. Most of the periodicals and the bound volumes are consulted in the library so the circulation figure is only a partial indication of the use of the library.

*Interlibrary loans:* The librarian used the facilities of other libraries and during the year the library borrowed 99 volumes from 5 libraries as listed below:

Boston Medical Library . . . . .	55	Harvard Business School Library . . . . .	4
N. Y. Academy of Medicine Library . . . . .	13	Clark University Library . . . . .	3
Harvard College Library . . . . .	24		

Our library lent 48 volumes to three libraries as follows:

Worcester District Medical Society . . . . .		Brown University Library . . . . .	1
Library . . . . .	46	Boston State Hospital . . . . .	1

*Medical Library Association:* The library maintained the membership in the Medical Library Association. The Association is of the greatest benefit to all medical libraries in supplying them with missing and out-of-print material for the nominal charge of the postage. Fifty-six volumes were received from the Exchange of the Association during the year. The librarian attended the meeting of the Association held in Newark, N. J., June 27-29, 1939, working on various committees and taking part in the discussions.

*New Books:* 135 new volumes have been added to the shelves in 1939, not including the newly bound volumes of periodicals.

*Binding:* 301 volumes were bound during the year, mostly current issues of medical periodicals.

*Present state:* On November 30, 1939, inventory of the library shelves showed—

Bound volumes of periodicals . . . . .	4,579
Unbound volumes of periodicals . . . . .	20
Bound volumes of books . . . . .	1,939
Old books (mostly historical in neurology and psychiatry) . . . . .	1,376

---

Total books . . . . . 7,914

(This number represents an increase of 678 volumes over the previous year.)

Catalogued reprints . . . . .	7,047
Abstracts . . . . .	5,872
Bibliographic cards . . . . .	10,530
Lantern slides . . . . .	634

*Services:* The librarian continued to circulate to the staff bibliographies and abstracts, prepared many special bibliographies, and translated foreign medical articles for the use of the staff. The bibliographies, abstracts and translations are filed in the library.

*W. P. A. Projects:* Two stenographers continued to work on the projects approved by the Federal Government, i.e. compilation of a bibliography of schizophrenia and completing the collected abstracts on schizophrenia.

## II. General Library

To patients in this hospital, many of whom are here for extended periods, the General Library is a great boon. In a modern hospital, library service is considered one of the important functions as it offers an easy and simple way to make available to all patients news of outside activities, and the interest aroused by reading is a familiar tool for "changing the thoughts."

Observation of the reading-interest within the institution reveals trends about the same as in any urban community. Fiction is the most popular; biography, history and travel rank next in order, and even scientific literature is called for in about the ratio of its demand from the general public. The selection of books is made with a view to providing new literature for the varied demand, introducing new subjects to the readers and replacing on the shelves new editions of old and favorite classics.

Employees as well as patients are at liberty to use the facilities of the library and their appreciation of this service is indicated by the circulation figures quoted.

In the first half of the year one of the W.P.A. workers gave part time assistance in the library and the Occupational Therapy students took the book truck to the closed wards. On September 1st, a full-time attendant was appointed for the library, with a division of her time between the desk and the ward service.

The book-truck service to the wards has been placed on a regular schedule—twice a week to the male wards, twice a week to the female wards, and weekly to the Summer Street Department, Hillside Farm and the Farmhouse (in rotation). In this way a good selection of books and magazines is available to patients who cannot come to the library.

We are now experimenting with an "Evening Hour" (6:00-7:00) keeping the library open at that time to give patients an opportunity to read the evening papers. This also gives working-patients an opportunity to use the library.

During the current year 246 new books were added to the shelves.

On November 30, 1939, the General Library had:

Books (fiction and non-fiction)	2,528	Bibles and prayer books	18
Serials	325	Reference books	94
Bound magazines	112		

---

Total books . . . . . 2,977

Stereopticon slides . . . . . 100

In addition to our stock, we borrow 150 books every three months from the Worcester Public Library.

Fifty-one popular magazines, 12 technical periodicals and 6 daily newspapers are subscribed to by the Hospital.

Arrangements have been made with the Free Public Library to lend 100 volumes every three months to the Summer Street Department. In addition to this 100 volumes are sent to Summer Street from our General Library in the Main Hospital and 10 popular magazines and newspapers are subscribed to for this Department.

The library is well patronized by patients and employees, the average monthly attendance being 1,041 patients and 172 employees. 3,904 patients' and 3,298 employees' charge slips are on record for the year. The library circulated 14,049 volumes and had 15,147 reading visitors.

A few of the churches of Worcester and the Free Public Library send us used books and magazines regularly. We express our thanks for all such donations.

## PUBLICATIONS FROM WORCESTER STATE HOSPITAL

DECEMBER 1, 1938—NOVEMBER 30, 1939.

1. Histologic changes in senile dementia and related conditions studied by silver impregnation and microincineration. Leo Alexander and Joseph M. Looney. *Arch. Neur. & Psychiat.* 40: 1075, December, 1938.
2. The significance of frustration as a problem of research. Saul Rosenzweig. *Character and Personality* 7: 120, December, 1938.
3. General outline of frustration. Saul Rosenzweig. *Character and Personality* 7: 151, December, 1938.

4. Cost in relation to standard of State Hospital care. William A. Bryan. *Am. Ass'n Adv. Sci., Mental Health, No. 9*: p. 174, 1939.
5. The function of biometric methodology in psychiatric research. E. M. Jellinek. *Am. Ass'n Adv. Sci., Mental Health, No. 9*: p. 48, 1939.
6. The determination of spinal fluid protein with the photoelectric colorimeter. Joseph M. Looney and Anna I. Walsh. *J. Biol. Chem.* 127: 117, January, 1939.
7. The structure of wholes. Andras Angyal. *Phil. of Sci.* 6: 25, January, 1939.
8. The effects of high humidity on skin temperature at cool and warm conditions. H. Freeman and B. A. Lengyel. *J. Nutri* 17: 43, January, 1939.
9. The care of the aged. Arthur J. Gavigan and Evelyn H. Pettee. *Am. J. Nurs.* 39: 150, January, 1939.
10. Function of the Psychologist in the state hospital. David Shakow. *J. Con. Psych.* 3: 20, January, 1939.
11. Electroencephalographic localization of atrophy in the cerebral cortex of man. Morton A. Rubin. *Proc. Soc. Exp. Biol. & Med.* 40: 153, February, 1939.
12. Brain wave frequencies and cellular metabolism. Effects of dinitrophenol. Hudson Hoagland, Morton A. Rubin and D. Ewen Cameron. *J. Neurophysiol.* 2: 170, March, 1939.
13. The return of cognitive conscious functions after convulsions induced with metrazol. Louis H. Cohen. *Arch. Neur. & Psychiat.* 41: 489, March, 1939.
14. Effects of vitamin B<sub>1</sub> in schizophrenia. Louis S. Chase. *Am. J. Psychiat.* 95: 1035, March, 1939.
15. A critique of cultural and statistical concepts of abnormality. Henry J. Wegrocki. *J. Abnorm. & Soc. Psych.* 34: 166, April, 1939.
16. Thought disturbances in schizophrenia as revealed by performance in a picture completion test. Eugenia Hanfmann. *J. Abnorm. & Soc. Psych.* 34: 248, April, 1939.
17. The determination of serum phosphatase and its clinical significance. Joseph M. Looney. *N.E.J. Med.* 220: 623, April, 1939.
18. The pharmacologic antagonism of metrazol and sodium amytal as seen in human individuals (schizophrenic patients). Louis H. Cohen. *J. Lab. & Clin. Med.* 24: 681, April, 1939.
19. Brain potential changes in man induced by metrazol. Morton A. Rubin and Conrad Wall. *Br. J. Neur. & Psychiat.* 2: 107, April, 1939.
20. A qualitative analysis of the Healy Pictorial Completion Test II. Eugenia Hanfmann. *Am. J. Orthopsychiat.* 9: 325, April, 1939.
21. An easily made apparatus for use in "Closed System" pneumoencephalography with notes on technic for its use. William L. Holt and Robert S. Schwab. *Arch. Neur. & Psychiat.* 41: 1021, May, 1939.
22. Factors involved in the stability of the therapeutic effect in the metrazol treatment of schizophrenia. (A report of 146 cases). Louis H. Cohen. *N.E.J. Med.* 220: 780, May 11, 1939.
23. Some principles of psychiatric classification. E. M. Jellinek. *Psychiatry* 2: 161, May, 1939.
24. Statistics on some biochemical variables on healthy men in the age range of 20 to 45 years. E. M. Jellinek and J. M. Looney. *J. Biol. Chem.* 128: 621, May, 1939.
25. The therapeutic significance of fear in the metrazol treatment of schizophrenia. Louis Cohen. *Am. J. Psychiat.* 95: 1349, May, 1939.
26. The effects of insulin on serum lipids and choline esterase in schizophrenia. (Preliminary Report). Lowell O. Randall. *J. Biol. Chem.* 128: lxxxii, June, 1939.
27. Prima Donnas on the payroll. William A. Bryan. *National Safety News.* 39: 51 and 80-81, June, 1939.
28. Metrazol treatment of depressions. Frances Cottington and Arthur J. Gavigan. *N.E.J. Med.* 220: 990, June 15, 1939.
29. Serum lipids in schizophrenia. Lowell O. Randall and Louis H. Cohen. *Psychiat. Quart.* 13: 441, July, 1939.
30. Changes in lactic acid, pH and gases produced in the blood of normal and schizophrenic subjects by exercise. Joseph M. Looney, *Am. J. Med. Sci.* 198: 57, July, 1939.



31. A variability study of the normal and schizophrenic occipital alpha rhythm. II. The electro-encephalogram and imagery-type. Morton A. Rubin and Louis H. Cohen. *J. Ment. Sci.* 85: 779, July, 1939.
32. Psychiatric changes associated with induced hyperthyroidism in schizophrenia. Louis H. Cohen. *Psychosomatic Medicine* 1: 414, July, 1939.
33. The relationship of male sex hormone to the level of bodily vigor in senility. R. G. Hoskins, H. M. Levene and S. Bevin. *Endocrinology* 25: 143, July, 1939.
34. Physiological studies in insulin treatment of acute schizophrenia. I. Methods. E. M. Jellinek. *Endocrinology* 25: 96, July, 1939.
35. Physiological studies in insulin treatment of acute schizophrenia. II. Pulse rate and blood pressure. E. Ewen Cameron and E. M. Jellinek. *Endocrinology* 25: 100, July, 1939.
36. Physiological studies in insulin treatment of acute schizophrenia. III. The serum lipids. Lowell O. Randall and E. M. Jellinek. *Endocrinology*, 25: 105, July, 1939.
37. Physiological studies in insulin treatment of acute schizophrenia. IV. The choline esterase activity of the blood serum. Lowell O. Randall and E. M. Jellinek. *Endocrinology* 25: 278, August, 1939.
38. Physiological studies in insulin treatment of acute schizophrenia. V. The blood minerals. J. M. Looney, E. M. Jellinek and Cora J. Dyer. *Endocrinology* 25: 282, August, 1939.
39. The art of understanding. Ethel Jeanne Schwager. *Pac. Coast J. Nurs.* 35: 474, August, 1939.
40. Adult norms for the K-S Clinical Formboards. David Shakow and Bessie Pazeian. *J. App. Psych.* 23: 495, August, 1939.
41. Racial differences in the neurosis and psychosis. Geza Roheim. *Psychiatry*, 2: 375, August, 1939.
42. Significance of behavior during hypoglycemia. Conrad Wall. *Mass. Dept. Ment. Health, Symposium on Therapy*, p. 21, September, 1939.
43. Narcosis treatment in the psychoses. Walter E. Barton. *Mass. Dept. Ment. Health, Symposium on Therapy*, p. 41, September, 1939.
44. Studies on the Phytotoxic Index. III. (An evaluation of the method with reference to depressed psychotic patients). Joseph M. Looney, William Freeman and Rose R. Small, *Am. J. Med. Sci.* 198: 528, October, 1939.
45. Skin and body temperatures of schizophrenic and normal subjects under varying environmental conditions. H. Freeman. *Arch. Neur. & Psychiat.* 42: 724, October, 1939.
46. The determination of globulin and albumin in blood serum by the photoelectric colorimeter. Joseph M. Looney and Anna I. Walsh. *J. Biol. Chem.* 130: 634, October, 1939. *Ibid.* (Preliminary report) 128: lx, 1939.
47. Psychotherapy for the poor. A state-city cooperative enterprise in the field of mental hygiene. James Watson. *Ment. Hyg.* 23: 558, October, 1939.
48. The social and cultural implications of incest among the Mohave Indians. George Devereaux. *Psychoanalytic Quart.* 8: 510, October, 1939.
49. The electroencephalogram of schizophrenic patients during administration of Vitamin B<sub>1</sub>. Morton A. Rubin. *Proc. Soc. Exp. Biol. & Med.* 42: 440, November, 1939.
50. Psychopathy, psychosis and internal secretions. R. G. Hoskins and L. H. Cohen. *Cyclopedia of Medicine*, Vol. 5: Chap. IX, pp. 646-690, F. A. Davis & Co., 1939.
51. Neuro-endocrinology. L. H. Cohen and R. G. Hoskins. *Cyclopedia of Medicine*, Vol. 5: Chap. X, pp. 690-713, F. A. Davis & Co., 1939.
52. The Mental Hospital as a Social Service Training Center. Barbara Estes. *Proc. National Conference of Social Work*, 1939. Columbia University Press, New York, pp. 409-415.

*Scientific Meetings Addressed by Members of the Staff:*

Dr. Bryan, National Conference of Social Work in Buffalo.

Dr. Hoskins, Annual meeting of the Association for the Study of Internal Secretions; the Marcus A. Rothschild Memorial Lecture at Beth Israel Hospital (N. Y.); Round Table New York Academy of Medicine.

Dr. Angyal, Round Table and presentation of paper at American Psychiatric Association, Chicago.

Dr. Kemble, Massachusetts Medical Society Annual Meeting, Worcester.

Dr. Rosenzweig, British Association for the Advancement of Science, Dundee, Scotland.

Dr. Rodnick and Dr. Rotter, Eastern Psychological Association, Bryn Mawr.

Mr. Wise, American Association for the Advancement of Science, Richmond, Va., Michian Society for Mental Hygiene, Grand Rapids and Conference on Mental Hygiene and Pastoral Relations, New York City.

Miss Estes, National Conference for Social Work, Buffalo.

#### EDUCATIONAL ACTIVITIES

The future of psychiatry is directly dependent upon the training and preparation of new workers in its field. Residents, internes and students are encouraged to come to the hospital for periods of training or special lecture courses that will enable them to prepare themselves for future independent work in this field. On the clinical service we have at present seven residents who are serving a one-year period of training in the field of psychiatry and three internes of the Peter Bent Brigham Hospital who come for a four months' intensive training in clinical psychiatry intended to give them a grasp of psychiatric implications in general practice. Fourth year medical students from Tufts Medical School and the Boston University School of Medicine serve a four weeks' internship intended to provide them with a good grasp of clinical psychiatric knowledge essential in the practice of medicine. The teaching of all of these is organized by the clinical director and shared by the members of the staff, social workers, nurses, occupational therapists, psychologists, etc. The clinical director in the capacity of clinical professor in the two schools prepares the students for this work by courses in the earlier years of the students training. The director and the staff also cooperate in the teaching of students and internes trained in other departments. Courses in applied psychiatry and demonstrations are given to students in psychiatric social work, occupational therapy, psychology, and psychiatric nursing. One of the most profitable methods of instruction is that given by means of "evaluation" seminars with student groups from two or more departments. In these seminars carefully selected patients are presented and an attempt is made to determine the interrelationship of activities and the results of cooperative therapeutic efforts.

The state hospital provides a vast laboratory for the study of mental disorders. It supplies both case material and the specialists who can best interpret it. It is not surprising then that those interested in abnormal psychology and adjustment problems should turn to this source for clinical instruction.

Students from Wheaton, Holy Cross, Simmons, Middlesex and Norwich College, Babson's Institute and many other students in professional fields allied to psychiatry have met with us for special instruction and clinic demonstrations to outline those phases of psychiatric experience that can be of benefit to them in their work in the community at large.

There are 59 students in training at Worcester most of the time. The quota as it stands includes:

Medical Student Internes . . . . .	7	Child Guidance Clinic Research Quota:	
Graduate Medical Residents . . . . .	6	Psychology Student . . . . .	1
Graduate Pathology Residents . . . . .	2	Social Service Students:	
Dental Internes (for 3 months) . . . . .	2	Smith College . . . . .	2
Psychiatric Social Service Students:		Simmons College . . . . .	1
Smith College . . . . .	3	Graduate Medical Residents and	
Simmons College . . . . .	2	Biometrics Students . . . . .	4
Psychology Students . . . . .	5	Affiliate Student Nurses . . . . .	12
Occupational Therapy Students . . . . .	8	Post Graduate Nurses . . . . .	2
Laboratory Technicians . . . . .	2		

The following staff members held teaching appointments during the year:

Dr. William Malamud, Clinical Professor of Psychiatry at Tufts and Boston University Medical Schools.

Dr. Walter E. Barton, Instructor in Medicine and Clinical Psychiatry, Smith College School for Social Work.

Dr. William Freeman, Instructor in Pathology at Boston University Medical School and Worcester Hahnemann Hospital.

Dr. J. M. Looney, Special Lecturer in Endocrinology at Holy Cross, Clark and Boston College.

Dr. S. Rosenzweig, Instructor in Dynamic Psychology at Clark University.

Dr. E. Rodnick, Instructor in Psychology at Mt. Holyoke College.

Mr. Carroll A. Wise, Instructor in Abnormal Psychology and Psychology, Boston University School of Religion and Social Work.

### *Nursing Education*

The activities of the Nursing Department under Evelyn H. Pettee, B.S., R.N., can be roughly classified as postgraduate, affiliate, staff, and extra mural education.

Two students completed the eight-month postgraduate course in psychiatric nursing on May 31, 1939, and two students were enrolled in the post graduate course for 1939-1940.

The postgraduate curriculum has been organized with as many courses as possible on a thirty-two semester hour basis, so that students working for a college degree may receive maximum credit for their work. This has been accomplished by combining short related courses.

The postgraduates have attended one hundred and fifty-two lectures by physicians (this includes staff conferences), forty and one half hours by nurses, and seventy-three hours by special therapists. The postgraduate students provided the hospital with 1,894 hours of nursing service.

Sixty-one student nurses will have completed a three months' affiliate course in psychiatric nursing in the year ending December 31, 1939. Forty-eight of these students have been in residence and the remaining thirteen commuted.

The nursing school distribution is as follows:

<i>School of Nursing</i>	<i>Location</i>	<i>Number</i>
Beth Israel Hospital . . . .	Boston, Mass. . . . .	1
Hahnemann Hospital . . . .	Worcester, Mass. . . . .	8
Burbank Hospital . . . . .	Fitchburg, Mass. . . . .	8
Worcester Memorial Hospital . . . .	Worcester, Mass. . . . .	20
Saint Vincent Hospital . . . . .	Worcester, Mass. . . . .	24

Affiliate experience in the occupational therapy department was previously confined to the shop. At present students are assigned to the department for one week. Each student is given the responsibility for a two hour class in diversional therapy on one of the medical wards each morning. The two students who are in the department at the same time conduct such a class for two hours in the afternoon on a disturbed female ward. During the interim, the student prepares material for use in her classes. This arrangement has proved most satisfactory in that it enables the student to return to the general hospital with a better idea of the value and techniques of diversional therapy for the bed patient. It has fostered self reliance and initiative as well as provided experience with disturbed patients and developed an insight into the relationship of occupational therapy and nursing. It has made it possible to increase the number of patients who participate in occupational therapy projects on active wards.

During the year the affiliate nurses have attended one hundred and ninety lectures (including staff conferences which they have attended) by physicians, one hundred and eighty-five by nurses and sixty-four by special therapists. It is interesting that affiliating students have rendered 29,773 hours of service to the hospital in 1939 in spite of the fact that classes are included in their eight hour duty day and that their practical experience is assigned upon the basis of student need rather than administrative convenience.

All new employees receive seven orientation lecture hours and all new attendants thirty hours in psychiatric nursing.

Dr. Wright of the Department of Mental Health spent the month of September at the hospital and conducted a series of lectures in hydrotherapy for four groups within the hospital: physicians, female nurses and attendants, student nurses, and male nurses.

Enthusiasm for psychiatric nursing has been evident among the student group as four former postgraduate students and fourteen former affiliate student nurses have returned for employment as graduate nurses during the past year. The demand for affiliation in psychiatry is steadily increasing and it will probably be necessary to increase quotas to meet this need within the near future.



## COMMUNITY SERVICE

It is our belief that the hospital's obligations to the community is not discharged solely through the modern care and treatment of its citizens afflicted with mental disease. It has an obligation to use its resources and experienced personnel to discover new and better ways to treat illness and to train others in this special field of medicine. Still another obligation for service lies outside the hospital walls. Dissemination of knowledge about mental hygiene, and the opportunity for the study of incipient or minor mental disorder must exist if lasting reduction in the incidence of mental illness is to be achieved.

*Prevention:*

The ultimate goal of psychiatry is to establish measures that will prevent the occurrence of mental diseases. The most important requisite for the development of such measures is a thorough understanding of the causes of these diseases and their recognition and treatment before the patient has reached a point where hospitalization is necessary. To make progress in this direction it is necessary that the psychiatrist be given an opportunity to contact personality maladjustments at their early stages. With this in view a clinic is being organized at the Out-Patient Department of the Worcester City Hospital whose main functions will be to provide psychiatric help and investigation for those patients who come for help to the City Hospital. Such patients may be either frankly personality problems, personality problems developing in reaction to physical disease, or symptoms which develop on the basis of personality problems but stimulate somatic diseases.

Maladjustments of this type may be found among the ambulatory cases in the out-patient clinic or among the patients who, for one reason or another, have been admitted to the hospital as in-patients. This clinic is to be under the supervision of the clinical director working in cooperation with assistants both from the Worcester State Hospital and the Worcester City Hospital. The staff of this clinic will also include social service workers and a psychologist. It is primarily intended to investigate and treat early personality maladjustments and to prevent resulting serious involvements. In addition to this, however, it will provide excellent opportunities for the teaching of internes and students of both hospitals.

## THE WORCESTER CHILD GUIDANCE CLINIC

The Worcester Child Guidance Clinic has taken as a definition of its function, "The treatment of behavior problems in the emotional and social growth of children and adolescents." Developments of the past year have brought the clinic to a better realization of this function, and viewing these developments in retrospect affords evidence of this accomplishment.

The year was opened under difficulties. Dr. Kirkpatrick had just resigned from the directorship and there was no psychiatrist attached to the staff until May, 1939, when Dr. Robert Kemble began as Director. During this time, psychiatrists from the Worcester State Hospital gave their services to the Clinic. In September, Dr. Phyllis E. Shaefer began her duties as assistant psychiatrist, and Miss Alice Fleming filled the position of psychometrist. Miss Ethel Burnell, one of our social workers, left at the end of June to become Chief Social Worker of the Colorado Springs Child Guidance Clinic. The year was thus one of staff reorganization which had to be accomplished in the face of increased demands for Clinic services.

Fewer cases could be accepted for treatment, but the statistics show that cases were given more service. The total number of interviews per case was greater, and the emphasis in these additional interviews was directed toward getting cases started on a treatment basis, as contrasted with the more diagnostic type of service. Cases have been approached with the idea of helping them, rather than merely knowing or studying them, and the treatment process has been scrutinized with an eye to the dynamic factors influencing change and growth.

Thus the movement or progress of a case has become the focus of attention. This has led an interest in the factors which bring a case to the Clinic and those which tend to continue bringing him there. These factors lie partly in the individual and his problems, and partly in the Clinic and the therapist, together they are important to the relationship through which treatment must operate. This relationship and its factors need not be vague or mysterious, they can be approached and investigated just as any other processes or happenings. It is obvious that for growth and change to be seen and helped there must be continued interviews over a period of time. This will explain the aim of

the Clinic in approaching each case with the idea of its continuing, instead of merely studying and appraising it. In those cases that do continue the Clinic has been of greatest service, therefore, the emphasis has been on getting them to continue rather than merely be studied and then left to their own devices.

The difference this makes can best be seen in the form of the application interview. The application could be an elaborate and exhaustive collection of information about a case, with investigation of every factor that seems significant. On the other hand, it can be directed simply to the elements that decide whether the case will continue or not: does this mother want the help the Clinic offers, can she be given an understanding of how treatment is carried or by regular appointments over a period of time, can she make the necessary arrangements? This is an important shift in emphasis, and in making it we have seen gratifying improvement in the continuity of treatment.

This is but one example of how attention to the dynamics of treatment adds to the value of treatment and affords insight and perspective to the therapeutic process. Similarly, an awareness of the therapeutic situation and the relationship between patient and therapist is used to clarify and strengthen the relationships that the child must make in his everyday life.

The Clinic has fulfilled and extended its other responsibilities to the community. The number of talks to community groups was more than tripled in the past year. A program of service to the public schools of Webster has been continued, with constant examination into how that service can be made most effective. In the difficult problem of delinquency, new approaches are being tried. Here the probation officers of the Worcester courts have been most helpful with suggestions and cooperation.

The uses of group therapy in the form of a play group are being studied from the material of the group completed in May, 1939. Another group is being formed to continue investigating this form of treatment, which seems to have some interesting possibilities.

Miss Burnell continued her program at the Girls' Club, placing her emphasis this year upon her work with the leaders, and discussion groups with the older girls in the Club. She gave a series of lectures on the emotional development of the child, at the same time affording an opportunity for the discussion of problems of particular concern to the leaders.

In the training of workers in this field, the Clinic continues to afford a year's work to three student social workers, and a student psychologist. One psychiatrist is in training for the whole year, and in addition the resident psychiatrists of the Worcester State Hospital each receive three months of training at the Clinic. The training program has been given more form and substance through the use of weekly seminars in each of the three phases of work: therapy, social work, and psychological testing.

The critical evaluation of the Clinic's work is being continued in the follow-up study, the goal being approximately three hundred follow-up visits on cases that were carried on a treatment basis. Though no predictions can be made concerning the form the statistics will take, the staff has already learned a great deal from the individual reports. This is an arduous and difficult task and it is expected to be completed during 1940.

In all, the Worcester Child Guidance Clinic seems definitely accepted by the community as a valuable resource. More cases come to us than we can handle at all times, and this is perhaps the best indication that our services are appreciated. The Clinic is taking up its next responsibility, the critical evaluation and improvement of the quality of the services it gives.

#### I. *Report of Case Load:*

		<i>Total</i>
A. Carried Cases:		
1. Cases carried over from last year . . . . .		205
2. Intake a. New cases accepted . . . . .		172
b. Old cases reopened		
(1) last closed before present year . . . . .		24
(2) last closed within present year . . . . .		1
3. Total cases open at some time in this year . . . . .		402
4. Cases taken from service . . . . .		169
5. Cases carried forward to next year . . . . .		233
B. Closed cases followed up (not reopened) . . . . .		220
C. Applications rejected . . . . .		10
D. Applications withdrawn . . . . .		9

II. *Type of Service Classification:*A. *New Accepted Cases:*

6. Full service a. Clinic staff cases (9 reopened)	78
b. Cooperative cases (7 reopened)	26
c. Full service not a or b	0
7. Special and Diagnostic service (advice) (9 reopened)	93

8. Total new cases accepted	197
-----------------------------	-----

B. *Cases taken from service:*

9. Full service a. Clinic staff cases	45
b. Cooperative cases	15
10. Special service (advice)	109

11. Total cases closed during the year	169
--	-----

III. *Sources Referring New Accepted Cases:*

	<i>Full</i>	<i>Special</i>	<i>Total</i>
12. Agencies a. Social	19	14	33
b. Medical	3	4	7
13. Schools a. Public	6	3	9
b. Other	0	7	7
14. Juvenile Court	7	49	56
15. Private Physicians	3	2	5
16. Parents, relatives, self	65	14	79
17. Others (friend)	1	0	1
18. Total new cases accepted	104	93	197

IV. *Summary of Work With or About Patients:*A. *By Psychiatrists:*

1. Interviews with patients a. for examination	183
b. for treatment	591
2. Interviews about patients	33
3. Physical examinations by clinic staff members	2

B. *By Psychologists:*

1. Interviews with patients a. for examination	175
b. for re-examination	17
c. for treatment	546
2. Interviews about patients	12

C. *By Social Workers:*

1. Interviews in clinic	994
2. Interviews outside clinic	300
3. Telephone calls	833
D. Referral Interviews	151

V. *Service to Webster Schools:*

A. 1. Cases carried over from last year	31
2. New cases	9
3. Cases closed	29
4. Number of cases receiving service	40
B. 1. Social workers' interviews with patients, parents, teachers, and others	145
2. Psychiatrists' interviews with patients, parents, teachers, and others	33
3. Total number of interviews in Webster schools	178

VI. Number of Interviews Given by Staff Members	3,402
---	-------

VII. Number of Educational Lectures Given by Staff Members to Community Organizations	75
---	----



VIII. *Personnel Report* (Average staff during year):

	<i>Full-time</i>	<i>Part-time</i>
A. Regular Staff:		
1. Psychiatrists . . . . .	2	
2. Psychologists . . . . .	2	
3. Social Workers . . . . .	3	1 (vol)
4. Clerical Workers . . . . .	2	1
B. Staff in Training:		
1. Social Workers . . . . .	3	—
2. Psychologist . . . . .	1	—
3. Psychiatrists . . . . .	Five different internes, each for three month periods.	

IX. *Operating schedule:*

A. Schedule of clinic days and hours:	B. Schedule of attendance of psychiatrists
9 to 5 daily	9 to 5 daily
9 to 12 Saturdays	9 to 12 Saturdays

## MENTAL HEALTH CLINIC

The hospital also operates with the cooperation of the Worcester Department of Public Welfare, a clinic at 58 Front Street, Worcester, Massachusetts, for the treatment of mild mental disorders in adults. The director of this clinic serves also as medical supervisor of all cases placed in family care.

*Statistics:*

Number of lectures and addresses given . . . . .	69	Worcester State Hospital . . . . .	36
Clinic consultations . . . . .	586	Associated Charities . . . . .	9
Advisory Consultations . . . . .	208	W.P.A. . . . .	5
New Patients . . . . .	132	Probation Officer — Worcester . . . . .	4
Total Patients for the year . . . . .	292	Clergyman . . . . .	3
Number of types of new cases . . . . .	35	Church . . . . .	3
Number of Agencies referring cases . . . . .	18	Physician . . . . .	2
		Probation Officer — East Brookfield . . . . .	2
		Girls Welfare Home . . . . .	2
		District Nurses Association . . . . .	2
		Children's Friend . . . . .	1
		S.P.C.C. . . . .	1
		Worcester Boys' Club . . . . .	1

*Agencies in Order of Number of Cases**Referred:*

## Board of Public Welfare:

District 1, 2, 3, 4 . . . . .	40
Aid to Dependent Children . . . . .	19
Old Age Assistance . . . . .	1
Home Economics . . . . .	1

— 61

The above analysis of the activities of the Mental Health Clinic shows that a large part of the cases referred came from but a few of the many agencies that used the Clinic during the year. This fact should be taken into consideration in a report on the probable future activities of the Clinic.

Of the 132 new clients, 61 were referred by the Board of Public Welfare. This extensive use of the Clinic by this agency was to be expected as the Board of Public Welfare helps maintain the Clinic by supplying the office used and also the stenographic assistance required.

Next in order of number of cases referred came the Worcester State Hospital with 36 patients. They should be referred only for fairly intensive psychotherapy and not merely for "follow-up" observation; and those selected for such therapy should have a fairly good prognosis in terms of the interest and ability of the director as well as in terms of the patient's particular "total situation."

Of the 18 agencies that referred cases, 7 have been characterized as "Special Agencies" as they do a specific kind of work in which psychological factors are often of paramount importance. It seems to me that the scope of the Clinic can be increased, not by taking complete charge of all cases referred by these agencies, but by consulting with a particular agency about a case and attempting to have the agency treat the case under the supervision of the Clinic. In the first place the Clinic can supervise the treatment of more

cases than it can treat by itself. Such a procedure will not only have an immediate utility by increasing the number of cases that can be treated, but it will give individual workers supervised training so that they will gradually grow in their ability, as well as in their confidence to treat cases in which psychological factors are important. In the second place the services offered by special agencies can be better integrated, if there is a central agency working with all of them that may draw several of them into the treatment. In this way each agency will come to know more than it does at present about what the others are doing, and thus see how the particular services offered by some other agency can be used in treatment. In general it seems to me that the future of the Mental Health Clinic lies in its gradually becoming a counselling center where agencies or individuals can receive advice on psychological problems, and where any decision reached will arise out of the consultation, and not be handed down by the psychiatrist. This statement does not mean that the director would not continue to do psychotherapy with a number of selected patients.

Some steps have already been taken to make the clinic into a counselling center. A weekly case conference has been started at the Associated Charities and two weekly case conferences at the Board of Public Welfare. These two agencies are especially pleased with this extension of the activities of the Clinic. The Board of Public Welfare will provide more space so that the counselling aspect of the Clinic can be emphasized.

#### SCHOOL CLINICS

The state school clinic functions under regulations made jointly by the Department of Education and the Department of Mental Health for the "Determination of the number of children retarded in mental development" with amendments which added permission for the Superintendent of Schools to "present for examination any child appearing to be retarded less than three years."

Reports on every child examined are made to the statistical department of the Department of Mental Health. Personnel of the school clinics from the various state hospitals and feeble minded schools consists of psychiatrist, psychologist and social worker from each hospital and state school. The school system personnel consists of the school superintendent, school nurse or visiting teacher and a teacher assigned by the superintendent to give school tests.

The psychiatrist does a physical examination, limited in scope, which might be well made by the school physician of each town, who should be brought into the conference and study of the children.

Dates for holding clinics are made as far in advance as possible, but in many cases, owing to lists of pupils to be examined and lateness of the work in completing the histories and school tests, result in our inability to make dates far in advance. School superintendents are urged annually to submit their lists of children to be examined early in the school year, but many fail to do this.

Dates for holding clinics are in general set on Tuesdays and Thursdays, reserving Wednesday afternoons for conference of completed work.

#### *Clinic Operation:*

1. Lists for children for examination are submitted to the Superintendent of the hospital conducting the clinic.

2. The required history and school test forms are forwarded to the school superintendent and preferably the hospital social worker should confer with him and the school nurse relative to procedure in acquiring histories, and with the assigned teacher relative to giving school tests and marking them.

3. Histories and school tests are completed by the nurse and teacher and forwarded to the psychiatrist.

4. Clinic examination is made of the children.

5. Records are studied by the psychiatrist and psychologist and recommendations made for each child.

6. Conference is held after school hours between the combined staffs of the school and clinic with interested teachers, with the idea of making the best recommendations for the child in the physical, educational, psychiatric and social fields.

7. Parents of children are interviewed by the psychiatrist at the invitation of the School Superintendent.

8. Detailed written reports of the examinations with recommendations are made to the school superintendent and a prescribed report is made to the Director of the Statistical Department of the Commission of Mental Health, on each child.

The School Clinic examined 257 children from 20 towns during the year ending November 30, 1939.

Partial analysis indicates the primary reason for referral was Retardation in 134 cases. 119 cases were found to be School, Behavior or Personality Problems, who were not as easily provided for.

Special class recommendations were made for about 48% in whom some Personality, School and Behavior Problems were included but in dull minds whose treatment must be a long time job.

About 6% were recommended for psychiatric treatment and full child guidance clinic treatment. Many recommended for guidance clinic study from nearby towns may receive such treatment but practically all from more distant towns have no clinic facilities.

A gradually increasing larger number of children of fair to good intelligence are being referred. Those needing such treatment came from about half of the towns examined.

A noteworthy finding was 21 cases of serious Birth Difficulty, some instrumental and 113 cases with known poor hereditary environment were recorded, which indicates a rather large percent for whom not too much may be expected from either the clinic or school.

Each school superintendent was given, in addition to a conference with the school staff on all cases examined, a card bearing certain statistical information regarding the child to which is appended our recommendations; a Correlation Chart graphically inscribed with the child's age, mental age, grade in which he should be against the grade he is achieving in each school subject.

This past year, in addition to a report of our brief psychiatric examination, a report of the child's physical examination, important points in anamnesis, school history and personality traits found by both the school and the clinic, with a brief theoretical explanation of how the child became a problem with mechanisms was given. This addition has met with general favor by the school superintendents. School superintendents have been asked to designate the problem cases who seem to have fair to good intelligence to enable us to know whom to pay special attention.

#### *Recommendations:*

1. Clinic staff should be provided with a psychiatric social worker whose duty would be to confer with each nurse in assisting her to understand how to get an adequate history.
2. Conference with the special teacher chosen by school superintendent to give school tests to acquaint her with how tests should be administered and scored to enable us to understand the child's achievement academically and make correct correlation charts. This latter conference would be of great help to our psychologists who make the charts.
3. Social worker should make arrangements for a place for clinic to be held.

- II. The small yet increasing number of children of fair to good intelligence referred with problems should be given further treatment to towns so far removed from guidance clinic centers as to make it possible for them to get adequate treatment. (19 cases this year).

- III. Some member of our psychological staff should be allowed time to give reading tests for suitable cases, particularly those with a fairly good intelligence whose basic problem is Reading Difficulty.

- IV. School Staffs should be brought into general conference when some good speaker should address them and someone should give them further information on aims and methods of school clinics.

#### DIVISION OF PUBLIC RELATIONS

To meet the need of dissemination of mental hygiene information, the hospital issues a booklet listing members of the staff with short biographical sketches and thumb nail abstracts of the topics they are prepared to discuss. Booklets are sent to civic organizations in order that health talks may be included in their educational programs.



The widespread popularity of this service is attested to by the following summary of talks given outside the hospital in 1939.

<i>Name of Speaker</i>	<i>Number of Talks</i>	<i>Name of Speaker</i>	<i>Number of Talks</i>
Walter E. Barton, M.D.	104	Lonnie O. Farrar, M.D.	5
Carroll A. Wise	101	Barbara Estes	4
Esther Whitman	65	William Freeman, M.D.	3
William A. Bryan, M.D.	43	Benjamin Simon, M.D.	3
James Watson, M.D.	42	Andras Angyal, M.D.	2
Esther Burnell	35	Louis H. Cohen, M.D.	1
Robert Kemble, M.D.	15	S. Harvard Kaufman, M.D.	1
Katherine M. Steele	15	Phyllis E. Schaefer, M.D.	1
Joseph M. Looney, M.D.	9	Norman Render, M.D.	1
Wallace Searle	7	Helen Hollander	1
Hildur Ekdahl	6	David Shakow	1
Ruth Walton	6		
Total for year 1939			470

#### ADMINISTRATIVE ACTIVITIES

The hospital has still another obligation to the people it serves, that of sound business management. The wise use of funds appropriated for annual expenses, the elimination of waste and extravagance and planned economy are objectives within the realm of achievement. We are constantly striving to introduce into the business side of the hospital new ideas and practices that will result in more efficient use of public funds or even a reduction of expense without a sacrifice of either personnel standards or medical program.

#### THE STEWARD'S DEPARTMENT

Through the cooperation of the Steward's and Treasurer's Department, the books for the year 1939 were closed in good order with inventories low and under control, with standards maintained and small unspent appropriation balances. This reflects the good results that can be obtained, even in a year of reduced budget and general saving, with the daily financial accounting methods in use in the hospital. We are firm believers in the daily balance sheet that correlates available moneys with expenditures and commitments as well.

We have tried to introduce even closer supervision and control of distributed hospital supplies. Records have been devised to provide greater accuracy and accountability that should increase efficiency and reduce waste.

This year we have put into operation a new system of repairs that will for the first time place at our disposal information concerning the cost of repairs. At the same time, it will put our so called "expense material" on a perpetual inventory basis that is bound to effect economy in the near future.

The method consists in a division of repairs into those that can be completed with less than 16 hours labor and another group requiring more work called projects. A secretary lists repairs by number on a daily sheet to each maintenance division. The worker enters on a time card the hours spent on each numbered repair. Any materials issued for use, also bear on the requisition slip the repair number. A recap sheet can then be made to relate job, labor and material for ready calculation of cost.

Projects are graded as to urgency, given a number and are handled in precisely the same fashion.

It seems unnecessary to again call attention to the conditions of both our storeroom and laundry. These very essential departments of the hospital are certainly not improving with age. They are getting more and more expensive to operate each year and they are most inefficient. Inside cylinders of our wash wheels are badly patched, all leak and require continual repair. The tumblers are in an almost useless condition. Extractors are dangerous, presses are about gone and the general safety is inadequate. The demand on the laundry has not decreased, and this, together with poor working conditions, chiefly atrocious ventilation and crowding, brings about a demoralizing effect on the operatives. Although committed to an eight hour day the almost daily breakdowns produce emergency demands that make it necessary to work certain employees half a day on Sunday and also three nights each week to keep up with the work.

About 3,000 pounds of laundry are handled daily by the laundry or nearly 18 tons in a week.

In our 1938 report we discussed the storeroom situation as it existed, and there are no further comments to make except that for a hospital of this size, it is our opinion that the present facilities are both inadequate and expensive to operate.

The perpetual inventory introduced in the pharmacy last year has functioned satisfactorily to give complete control of purchasing. No complaints have been registered by the Medical Staff because of lack of drugs or service. Expenses were not lowered but no unexpended reserve was allowed to accumulate.

During 1940 it will be our endeavor to further apply good business management to the operation of this hospital in its various departments. This will be carried out just so far as it is possible with clerks that can be made available to handle the detail and information derived from its application. We have about reached the saturation point of our present clerical force with detail of the various activities we have taken on in excess of regular routine, but it is not our intention to ask for more until it can be definitely determined that the savings derived will fully warrant the increased personnel expense.

#### FARM REPORT

In spite of a severe drought throughout the latter part of the summer the farm has produced an abundant supply of vegetables, silage, and hay. For this success, a great deal of credit must be given to a carefully designed and systematic program of soil analysis, crop rotation, choosing a proper soil type for each particular crop and correcting soil acidity by applying lime wherever necessary. This program proved advantageous because in many cases crop yields increased greatly per acre.

Old run-out pasture lands responded very well to a somewhat similar program. During the past winter all brush and low growing shrubbery has been cleaned off of open pasture areas. In the spring a heavy bush harrow loosened up the hard mossy surface, this was followed by an application of lime and phosphate and finally reseeded to a Ladino clover and grass mixture. The old pasture area was then divided into four parts by fencing and cows were allowed to feed in each area eight to ten days. This plan gave each pasture a chance to regain its natural growth before cows were allowed to pasture it again.

Grass silage was introduced into our farm program and worked out very successfully. In the past we experienced difficulty in curing our first crop of hay due to poor curing weather. Grass silage has the following advantages:

- A. Earlier cutting — giving a better second crop.
- B. May be harvested during wet and poor weather; in fact the more moisture the better the feed.
- C. Molasses is used as a preservative — no fear of spontaneous combustion.
- D. Required only one week of tractor and man labor to harvest enough feed to carry throughout summer.
- E. Old method of greenfeed cutting required a gang and tractor four hours of each day throughout the summer year.
- F. No chance for heating and spoilage.
- G. A steadier milk flow.

We found that the cows relished this grass silage and kept in better condition.

A new 14' x 30' silo was added to the Hillside colony dairy barn. It is believed that this shall help to further reduce milk cost by giving us a better silage food and should reduce cost and bother of transporting ensilage from the main farm.

A new cattle Heredity Chart was developed at the farm office. We find it very helpful in maintaining a high producing herd of cattle. It contains all the past five or six generations of pedigrees, recorded in milk production and butter fat in such a concise form that one may at a glance make a comparison of daughter against dam or grand-dam. It was necessary to compute all past herd records and by using daily standard factors to bring every individual of a family group of several generations back to an equal basis on a 305 day mature lactation. These family groups are classified according to their ability to transmit milk and butter fat to their offspring. We can thereby easily tell when a new offspring arrives whether or not it shall remain in the herd for future use. It is believed that by this chart it shall be possible to greatly improve the herd in years to come.

Artificial insemination has been practiced in the dairy herd in a small way for a three month period. A veterinarian was hired to do the work, which started last March.

The first results were only fair and we are again trying to further the work along this line a second time, taking advantage of past experience. It is too early to predict any results on the second trial.

One tractor was traded in for a new Model H tractor which has a top road speed of twenty miles per hour. This is a great help in speeding up the farm operations, especially on long road hauls.

The patient labor continues to give us a problem especially during the rush season of harvesting. We experienced difficulty in harvesting certain crops at their peak of ripeness because of so much other necessary work. We believe the transferring of the outside supervisor and outside attendants to the farm jurisdiction improved efficiency a great deal.

During the past year nearly ten acres of new land have been reclaimed in the swamp area. This brings the swamp to full cultivation. Many feet of rock drains have been laid throughout the area during the past summer. We believe that we can have this swamp completely in seed this coming year.

A large parking area was built in front of the main administration building to accommodate the overflow of visitors' cars.

Many square feet of lawn area had to be reseeded because hurricane reconstruction damaged the lawn in many places.

Removal of all hurricane stumps has been completed and a program of reforestation carried on where these trees have been removed. A great deal of tree pruning and surgery work has been done by our own grounds force.

#### Statistics

*Dairy:* There were at the end of the year, 72 mature cows, 42 heifers over 1 year, 27 calves under 1 year and 3 bulls. 16,560 hours of employee and 41,563 hours of patient labor resulted in production of 929,590.5 lbs. of milk at 4c a pound. This was valued at \$37,183.60.

*Pork:* It took 4,040 hours of employee and 14,781 hours of patient labor to produce 38,744 lbs. of pork valued at 12c a pound for a total of \$4,649.28. There were 4 Dure Jersey Boars, 8 brood sows and 210 Spring shoats.

*Farm:* 34,035 hours of labor by employees and 221,574 hours of patient labor was put into work on the farm; 72.29 acres were in garden crops; 56.3 tons of fertilizer was purchased in addition to 589.5 loads of manure used; 1,047,935 lbs. of vegetables valued at \$14,978.56 were raised.

	Pounds		Pounds
Asparagus . . . . .	1,234	Corn, sweet . . . . .	73,007
String beans . . . . .	74,662	Onions . . . . .	62,529
Beets . . . . .	31,344.5	Spinach . . . . .	23,203
Cabbage . . . . .	60,501	Squash . . . . .	131,127
Carrots . . . . .	117,983	Tomatoes . . . . .	128,167
Celery . . . . .	31,366	Turnips . . . . .	95,627
35 acres produced 825,780 lbs. of ensilage corn valued at \$3,716.01. 15 acres were planted in green feed and yielded 67,150 lbs. 40.5 acres of hay yielded 757,106 lbs.			

#### ENGINEER'S REPORT

##### Plumbers:

The plumbing repairs were kept up and eight obsolete toilets were replaced, anti-siphon valves were installed on the fourth floor.

Bubblers of new design were placed in many wards, new flushometer valves were placed on toilets in the Lincolns.

A new copper cold water supply line was run from Main Hospital service to the Lowell Home.

Acid proof plumbing was installed in the Laboratory and gas lines were changed.

New sinks were built for the kitchen to replace worn out sinks.

##### Electricians:

Repairs were kept up and many projects completed. Wiring was installed for new X-Ray equipment. Much time has been spent on servicing motors. In many places obsolete wiring has been replaced. Several new street lights have been connected to improve the lighting of the grounds. One building of the farm group was wired. Changes were made at Hillside which improved the service. The kitchen at Summer Street Department was rewired.



*Machinst:*

Two machines of unique original design were built in the machine shop for use in the laundry. One counts articles received and the other folded laundered goods.

Several medical wheel chairs of special design were made.

All machinery in laundry, kitchen, bake shop and throughout the hospital was serviced and repaired from machine shop. Elevators were checked each day as an insurance for safety.

Steam leaks were repaired, steam traps cleaned, boilers and machinery and equipment were kept in good order. Eleven boilers in cottages and farm buildings were cleaned and placed in good condition for winter operations. New covering was placed on steam pipes. The machine shop was renovated and remodeled to bring it to the appearance and efficiency standard of the adjacent new power house. An old lathe was over-hauled and new punches were made for pipe cutting and threading machines.

*Engineers and Firemen:*

The engine and boiler rooms and their equipment were kept at a high peak of cleanliness.

From November 30, 1938 to November 30, 1939 the Main Plant used 1,406,724 gallons of Bunker "C" oil. During this same period, 1,429,600 kilowatts of electricity were generated for lighting and power on the grounds.

We believe a steady gain in economy and efficiency has taken place.

A request has been made that the rating of our plant be changed from second to first class as it fully meets the requirements for an advanced standing. Several men are studying to improve themselves and for the purpose of gaining a higher license. Rooms adjoining the engine rooms have been improved which has added to the appearance of the Power Plant. Pipes have been painted to comply with a color chart. New steps and doors have been placed at the rear as an entrance to a new locker room built for the Power Plant employees.

#### MAINTENANCE DEPARTMENT

The maintenance and repair work of a mental hospital can be classified under several headings.

1. The ordinary day by day work of the never ending small repairs in the hospital.
2. Carrying out larger construction projects which represent radical changes made in the interest of increased efficiency.
3. Supervising projects which are being built under special appropriations granted by the legislature.
4. Inspection of work being done by contractors to see that the specifications are complied with.

The ordinary maintenance repair work has been carried on during the year as rapidly and completely as the limited mechanical personnel permitted. The upkeep of buildings from sixty to more than one hundred years old which are occupied by mental patients many of whom are deliberately destructive means more in time, money and labor than would be the case in an ordinary building.

One of the largest repair items of the hospital is the replacing of glass; in 1939 we used 5,800 panes of glass, 4,500 feet of window cord, 500 gross of screws, and 25 kegs of nails. We also used 15,000 ft. of lumber, 1,200 gals. of paint, 1,100 bags of cement, 250 bags of plaster, 300 bags of lime, 25 bbls. of plaster paris. All of this material went into the routine maintenance of the building.

The painting program included the repainting of several wards and cottages, also wards and dining halls at the Summer Street Department.

Considerable repairs were also done at the Hillside dormitory and caretaker's quarters.

A complete change, including new counters, new sinks, etc., using carpenters, masons, painters, was done at the laboratory.

In the X-Ray Department, a complete renovation, including the moving of partitions, and the installing of others, new counters, new linoleum and floors, was done.

New hardwood floors were laid in the chapel, stage, and two adjoining rooms.

The front porch at the Summer Street Department was completely renovated. This was done with outside labor under the direction of the maintenance foreman.

The administrative offices were remodeled as were the offices of the chief clerk. A new record and file room was created out of a front corridor.

## PROJECTS

A few of the major projects completed during the year show hours of labor and cost, exclusive of materials used.

<i>Project</i>	Total number of hours	Cost of labor
1. Erection of a partition in the locker room adjacent to machine shops . . . . .	263 $\frac{3}{4}$	\$205.73
2. Painting of radiators on Howe 3 and 4, Phillip 3 and 4, and Washburn 3 and 4 . . . . .	39	30.42
3. Laying of cement walk to Quimby, Lincoln and Salisbury doors . . . . .	60	46.80
4. Remove wax covering and paint, repainting shuffle board . . . . .	31 $\frac{1}{2}$	24.57
6. Burying scales in floor . . . . .	64	49.92
7. Cover boiler at dairy with asbestos . . . . .	23 $\frac{1}{4}$	17.94
8. Laboratory Reconstruction: plumber and electrician; carpenter; painter . . . . .	891 $\frac{3}{4}$	695.57
9. Special locks on rooms and shutting off 3 sections in Salisbury, Phillip and Washburn basements . . . . .	391 $\frac{1}{4}$	30.61
10. Erection of roof on silo at Hillside Colony . . . . .	8 $\frac{1}{4}$	6.26
12. Repairs to rear porch at Prospect Cottage . . . . .	8 $\frac{1}{4}$	6.26
15. Repainting in Mr. Smith's apartment . . . . .	333 $\frac{1}{4}$	259.93
16. Install new street light — West wall of garage . . . . .	8 $\frac{1}{2}$	6.63
17. Two street lights installed on concrete walks Administration building to Avenue Cottage No. 2 . . . . .	91 $\frac{1}{4}$	7.41
18. Erection of partitions in office of Dr. Barton . . . . .	370 $\frac{1}{4}$	289.19
19. Carpenter, painter, and to laying of new floor in Miss Riddell's office . . . . .	801	624.78
21. Repairs to chimney on house, Plantation Street . . . . .	24	18.72
22. Carpenter work on Stonehouse, Hillside Colony . . . . .	78 $\frac{3}{4}$	61.03
24. Necessary repairs — Superintendent's apartment . . . . .	269 $\frac{3}{4}$	210.41
25. Repairs to roof and wall of hay barn . . . . .	13 $\frac{1}{4}$	10.34
26. Installation of pressure regulator for water — Quimby Base . . . . .	12 $\frac{3}{4}$	9.85
27. Relaying slate floor in shower room . . . . .	38 $\frac{1}{4}$	30.23
28. Necessary repairs to plaster, ceiling and stone in Folsom 3 . . . . .	32 $\frac{1}{2}$	25.15
29. Painting as required in Cafeterias — Patients' and Employees' . . . . .	95	74.10
31. Repairing roof leaks in Engineer's Dining Room . . . . .	2 $\frac{1}{2}$	2.73
32. Repairs to roof of cow-barn . . . . .	2	1.56
33. Repairs to porch corner in Washburn 1 . . . . .	8	6.34
34. Plumbing repairs in Sargent basement . . . . .	15 $\frac{3}{4}$	12.29
35. Removal of screens from E. B. windows . . . . .	11 $\frac{1}{2}$	8.97
36. Laboratory reconstruction installing counters and shellacing . . . . .	147 $\frac{3}{4}$	115.22
37. Removal of screens at Hale Home . . . . .	8	6.34
38. Removal of screens at Lowell Home . . . . .	7 $\frac{1}{2}$	5.85
39. Removal of screens — Sargent building . . . . .	14	10.92
41. Renovation of Dr. Banay's apartment. Carpentry, cleaning and painting as specified . . . . .	356 $\frac{1}{2}$	278.07
42. Painting radiators, Employees' Cafe . . . . .	123	95.94
43. Plumbing — Woodward 1 and 2 . . . . .	145 $\frac{1}{4}$	113.27
44. New floor in Chapel . . . . .	94 $\frac{3}{4}$	73.89
45. Duplicate keys for telephone office . . . . .	53 $\frac{1}{2}$	41.73
46. Christmas tree stands . . . . .	37 $\frac{1}{2}$	29.25
48. Furnishing "No Parking" signs . . . . .	33	29.04
49. Carpentry — table in Laboratory . . . . .	26	20.28
50. Removing tops of wall cabinets in Pathological Laboratory . . . . .	33 $\frac{1}{4}$	25.74
52. Plumbing repairs 4th floor — Male and Female sides, each ward . . . . .	20 $\frac{1}{2}$	15.99
53. Construction of brackets with pole to hold wrapping paper in clothing offices . . . . .	16 $\frac{1}{2}$	12.68
54. Construction of tables for Philip 3 . . . . .	57 $\frac{1}{4}$	44.65
56. New table tops — male cafeteria . . . . .	39 $\frac{1}{2}$	30.81
58. Plumbing and electrical work, Male wards first floor . . . . .	22 $\frac{3}{4}$	17.92
59. Fabrication and erection of new sinks — main kitchen . . . . .	25 $\frac{3}{4}$	20.09
62. Repair of dormitory doors . . . . .	19	14.82
64. New panels door — stairway Salisbury 2 . . . . .	11	8.58
67. Elevator and Plumbing repairs — Male reception service 2nd floor . . . . .	6	4.68
77. Painting walls and ceiling Apartment H-2 . . . . .	140 $\frac{3}{4}$	109.77

The Industrial Department under F. R. Proctor carried out many useful projects.

Mimeograph, 194,535 copies of various record forms and papers.

Furniture, repaired and painted 1,612 articles.

New goods made:

Rag rugs . . . . .	482	Leather slippers . . . . .	276 pairs
Brushes . . . . .	429	Toweling . . . . .	1,115 yards
Men's suits . . . . .	376		

Pressing, 3,000 coats and 4,460 pants.

Shoes repaired, 1,100 pairs.

Dictaphone records, 4,377 shaved.

New mattresses made 450, new pillows 156, mattresses retuffed 3,966.

Chairs and sofas upholstered 68.

Many other items such as bedside guards, rubber sheets, slip covers, fracture straps, laundry bags, window shades, and baseball bases were made.

The many activities of the Matron's Department under Miss Lillian G. Carr are reflected in part by these brief reports.

The mending room repaired 10,415 dresses, 10,252 suits of underwear, 12,566 shirts, and 7,395 sheets. The varied items coming for repair is suggested by noting tablecloths, slippers, shawls, barber gowns, uniforms, blankets, scarves, and flags.

The sewing room made many thousands of new items such as cafeteria and waitress uniforms to coffee bags and sofa pillows. 6,582 ward towels, 1,174 sheets, and 4,282 Indian Head napkins were manufactured, as well as 1,662 men's shirts and 2,625 women's dresses.

W. P. A.  
*Cataloguing and Research Project*  
*Official Project No. 665-14-3-210*  
*Work Project No. 17026*

This project consisted of transcribing, cataloguing, typing and cross-indexing records for the State Hospital to be used primarily for research purposes. The work was carried on by a group of fourteen girls: one supervisor, three cataloguers and ten typists.

In the Medical Library about 3,000 bibliographic cards were typed on Schizophrenia. Around 1,000 articles on the subject of Schizophrenia including English, French, German, and Italian were collected and typed. Both these sets of cards are kept in special files.

In the Pathology Department autopsy protocols and cross-index files (both major and minor) have been completed from 1895-1935. The data are now being studied to compare the findings peculiar to types of insanity.

In the Psychology Department a body of data collected over a period of ten years on different types of abnormal persons was brought into analyzable form. The filing system was reorganized; the results from 500 Clark-Thurstone Personality Inventories, the results from 1,000 Kent-Rosanoff Association Tests, the results from 250 examinations of General Paretics, the results from the Stanford-Binet Tests of 450 Dementia Praecox patients were tabulated. Manuscripts and articles were copied to be used in connection with this psychological research.

In the Statistical Department tabulations of the medications administered to one hundred Dementia Praecox patients on the research service, tabulations of the incidence of physical diseases in mental diseases, and the physiological factors over long time ranges in these patients were made.

The Worcester State Hospital and Clark College sponsor official project number 665-14-3-726. It is a study of Hormone metabolism in normal and pathological human beings to discover the relation of the metabolism of the female sex hormones to health and disease. Sex hormones in the urine of patients were determined quantitatively and variations in output measured and the nature of the output after administration of chemically known hormone.

Dr. Gregory Pincus supervises twelve W. P. A. workers.  
*National Youth Administration (N. Y. A.)*

Late in the year the National Youth Administration placed twelve girls in three groups in the business offices for special training. Supervisors were impressed with the enthusiasm and ability of the workers. This program promises to be popular enough to warrant extension into the training of boys in mechanical skills.

VALUATION  
November 30, 1939

Real estate — Land, 584.95 acres . . . . .	\$389,507.00
Buildings and betterments . . . . .	2,552,502.37
	<hr/> \$2,942,009.37

FINANCIAL REPORT

*To the Department of Mental Health:*

I respectfully submit the following report of the finances of this institution for the fiscal year ending November 30, 1939.

STATEMENT OF EARNINGS	
Board of Patients . . . . .	\$58,784.78
Personal Services . . . . .	356.00
Sales:	
Food . . . . .	\$1,834.21
Clothing and materials . . . . .	28.00
Furnishings and household supplies . . . . .	72.95
Medical and general care . . . . .	350.88
Heat and other plant operations . . . . .	291.50
Garage and grounds . . . . .	9.20
Repairs ordinary . . . . .	431.86
Farm: (Cows, calves and pigs, \$1,997.33; bags and vegetables, \$211.01; horses, \$1) . . . . .	2,209.34
Total Sales . . . . .	<hr/> \$5,227.94



Miscellaneous:		
Interest on bank balances . . . . .	\$100.00	
Rents . . . . .	1,154.50	
P & D Frt., \$31.48; Tel. Com., \$134.30; Auto claims, \$24.55; Simmons College, \$50; Court fees, etc., \$63.03	303.36	
Total Miscellaneous . . . . .		\$1,557.86
Total earnings for the year . . . . .		65,926.58
Total cash receipts reverting and transferred to the State Treasurer . . . . .		\$65,883.85
Accounts receivable outstanding Dec. 1, 1938 . . . . .	\$7.67	
Accounts receivable outstanding Nov. 30, 1939 . . . . .	50.40	
Accounts receivable increased . . . . .		\$42.73
MAINTENANCE APPROPRIATION		
Balance from previous year, brought forward . . . . .		\$286.36
Appropriation, current year . . . . .		1,074,749.95
Total . . . . .		\$1,075,036.31
Expenditures as follows:		
Personal services . . . . .	\$628,372.08	
Food . . . . .	198,522.92	
Medical and general care . . . . .	50,226.56	
Religious instruction . . . . .	2,930.00	
Farm . . . . .	21,857.70	
Heat and other plant operation . . . . .	74,245.90	
Travel, transportation and office expenses . . . . .	10,669.52	
Garage, \$2,994.99; and grounds, \$1,783.53 . . . . .	4,778.52	
Clothing and materials . . . . .	21,561.61	
Furnishings and household supplies . . . . .	33,459.51	
Repairs ordinary . . . . .	15,413.32	
Repairs and renewals . . . . .	9,219.05	
Total maintenance expenditures . . . . .		\$1,071,256.69
Balances of maintenance appropriation, Nov. 30, 1939 . . . . .		\$3,779.62
		\$1,075,036.31
SPECIAL APPROPRIATIONS		
Balance December 1, 1938, brought forward . . . . .		\$241,098.20
Appropriations for current year . . . . .		8,500.00
Total . . . . .		\$249,598.20
Expended during the year . . . . .	\$188,480.03	
Reverting to Treasury of Commonwealth . . . . .		188,480.03
Balance November 30, 1939, carried to next year . . . . .		\$61,118.17

APPROPRIATION	Act or Resolve	Total Amount Appropriated	Expended during fiscal year	Total Expended to date	Balance at end of year
Hydrotherapy Building, M.S.P.M. 50, PWA D. 4657	Chap. 234 1937	\$127,173.41	\$25.82	\$127,173.41	-
Plumbing — Summer Street Hospital . . . . .	Chap. 356 1938	12,300.00	-	12,298.98	1.02
Plumbing — Summer Street Hospital . . . . .	Chap. 309 1939	17,300.00	758.35	11,925.60	5,374.40
New boilers, stokers, etc. . . . .	Chap. 304 1936	270,000.00	2,192.82	268,857.72	1,142.28
X-Ray equipment . . . . .	Chap. 356 1938	8,000.00	7,763.98	7,763.98	236.02
Medical equipment . . . . .	Chap. 356 1938	5,000.00	4,617.72	4,617.72	382.28
Bake ovens . . . . .	Chap. 356 1938	6,550.00	6,534.77	6,535.23	14.77
Electric wiring . . . . .	Chap. 356 1938	10,000.00	9,909.08	9,909.08	90.92
Renovating plumbing, employees Bldg. . . . .	Chap. 309 1939	14,000.00	201.08	10,321.88	3,678.12
Hurricane and flood . . . . .	Chap. 507 1938	216,000.00	156,476.41	165,801.64	50,198.36
		\$686,323.41	\$188,480.03	\$625,205.24	\$61,118.17

## PER CAPITA

During the year the average number of patients has been, 2,532.86.

Total cost of maintenance, \$1,071,256.69.

Equal to a weekly per capita cost of, \$8.1335.

Total receipts for the year, \$65,883.85.

Equal to a weekly per capita of, \$5.0002.

Total net cost of maintenance for year, \$1,005,372.84.

Net weekly per capita, \$7.6333.

Respectfully submitted,  
MARGARET T. CRIMMINS,

Treasurer.

Financial statement verified.  
Approved:

GEO. E. MURPHY,  
Comptroller

## STATEMENT OF FUNDS

		November 30, 1939	
		PATIENTS' FUND	
Balance on hand November 30, 1938		\$5,381.17	
Receipts		8,045.66	
Interest		100.00	
			\$13,526.83
Expended		\$7,457.92	
Interest paid to State Treasurer		100.00	
			7,557.92
Balance on hand November 30, 1939			\$5,968.91
		Investments	
Worcester County Institution for Savings		\$1,000.00	
Worcester Five Cents Savings Bank		500.00	
Worcester Mechanics Savings Bank		500.00	
Peoples Savings Bank		1,000.00	
Bay State Savings Bank		1,000.00	
Worcester Depositors Corp. (Class A Cert.)		50.00	
Balance Mechanics National Bank		1,697.13	
Cash on hand November 30, 1939		221.78	
			\$5,968.91
		WHEELER FUND	
Balance on hand November 30, 1938		\$1,018.01	
Income to November 30, 1939		25.00	
			\$1,043.01
Expended to November 30, 1939			27.50
Balance on hand November 30, 1939			\$1,015.51
		Investments	
Worcester Mechanics Savings Bank		\$1,000.00	
Balance Mechanics National Bank		15.51	
			\$1,015.51
		CLEMENT FUND	
Balance on hand November 30, 1938		\$1,000.00	
Income to November 30, 1939		25.00	
			\$1,025.00
Expended to November 30, 1939			25.00
Balance on hand November 30, 1939			\$1,000.00
		Investment	
Worcester County Institution for Savings			\$1,000.00
		LEWIS FUND	
Balance on hand November 30, 1938		\$1,316.25	
Income to November 30, 1939		32.50	
			\$1,348.75
Expended to November 30, 1939			27.50
Balance on hand November 30, 1939			\$1,321.25
		Investments	
Worcester Five Cents Savings Bank		\$1,300.00	
Balance Mechanics National Bank		21.25	
			\$1,321.25
		MANSON FUND	
Balance on hand November 30, 1938		\$1,137.41	
Income to November 30, 1939		27.25	
Balance on hand November 30, 1939			\$1,164.66
		Investment	
Millbury Savings Bank			\$1,164.66
		CANTEEN FUND	
Balance on hand November 30, 1938		\$1,786.20	
Receipts to November 30, 1939		22,082.27	
			\$23,868.47
Expended to November 30, 1939			22,718.86
Balance on hand November 30, 1939			\$1,149.61
		Investments	
Worcester Depositors Corp. (Class A Certificates)		\$80.00	
Mechanics National Bank		806.66	
Cash on hand November 30, 1939		262.95	
			\$1,149.61
		ROCKEFELLER RESEARCH PROJECT	
Balance on hand November 30, 1938		\$1,610.34	
Receipts to November 30, 1939		15,555.33	
			\$18,165.67
Expended to November 30, 1939			16,420.18
Balance on hand November 30, 1939			\$1,745.49
		Investments	
Worcester County Trust Co.			\$1,745.49
		INSULIN TREATMENT FOR DEMENTIA PRAECOX	
Balance on hand November 30, 1938		\$14.07	
Expended to November 30, 1939		14.07	

## STATISTICAL TABLES

AS ADOPTED BY THE AMERICAN PSYCHIATRIC ASSOCIATION PRESCRIBED BY THE  
MASSACHUSETTS DEPARTMENT OF HEALTH

TABLE 1. *General Information*

(Data correct at end of institution year November 30, 1939)

Date of opening as a hospital for mental diseases, January 18, 1833.

Type of hospital: State.

Hospital plant:

Value of hospital property:

Real estate, including buildings

Personal property

\$2,942,009.37

468,094.85

Total

\$3,410,104.22

Total acreage of hospital property owned, 584.95.

Additional acreage rented, 45.

Total acreage under cultivation during previous year, 180.79.

Officers and employees:

	Actually in Service at End of Year			Vacancies at End of Year		
	M.	F.	T.	M.	F.	T.
Superintendents . . . . .	1	—	1	—	—	—
Assistant physicians . . . . .	12	—	12	1	—	1
Clinical assistants . . . . .	2	—	2	—	—	—
Total physicians . . . . .	15	—	15	1	—	1
Stewards . . . . .	1	—	1	—	—	—
Resident dentists . . . . .	1	—	1	—	—	—
Pharmacists . . . . .	1	—	1	—	—	—
Graduate nurses . . . . .	1	61	62	—	1	1
Other nurses and attendants . . . . .	146	163	309	1	6	7
Occupational therapists . . . . .	—	5	5	—	—	—
Social workers . . . . .	—	5	5	—	—	—
All other officers and employees . . . . .	134	87	221	8	3	11
Total officers and employees . . . . .	299	321	620	10	10	20

*Classification by Diagnosis September 30, 1939*

Census of Patient Population at end of year:

	Actually in Hospital			Absent from Hospital but still on Books		
	M.	F.	T.	M.	F.	T.
WHITE:						
Insane . . . . .	1,178	1,176	2,354	248	300	548
Mental defectives . . . . .	—	2	2	—	2	2
Alcoholics . . . . .	—	1	1	—	—	—
All other cases . . . . .	8	2	10	—	2	2
Total . . . . .	1,186	1,181	2,367	248	304	552
OTHER RACES:						
Insane . . . . .	27	25	52	2	2	4
Total . . . . .	27	25	52	2	2	4
Grand Total . . . . .	1,213	1,206	2,419	250	306	556

Patients under treatment in occupational-therapy classes, including physical training, on date of report

40

66

106

Other patients employed in general work of hospital on date of report

816

720

1,536

Average daily number of all patients actually in hospital during year

1,181.62

1,201.04

2,382.66

Voluntary patients admitted during year

10

4

14

Persons given advice or treatment in out-patient clinics during year

96

101

197



TABLE 2. *Movement of Patient Population for the Year Ended September 30, 1939*  
(Data in all of the following tables are based on the Statistical Year, October 1, 1938, to September 30, 1939)

	TOTAL			REGULAR COURT COMMITMENT (INSANE)			OBSERVATION		TEMPORARY CARE		VOLUNTARY				
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.			
Patients on books at the beginning of the year:	1,164	1,200	2,364	1,158	1,198	2,356	3	1	4	-	-	-	3	1	4
	233	299	532	233	299	532	-	-	-	-	-	-	-	-	-
Admissions during year:	1,397	1,499	2,896	1,391	1,497	2,888	3	1	4	-	-	-	3	1	4
	320	232	552	232	191	423	77	32	109	5	8	13	6	1	7
	115	106	221	85	95	180	24	7	31	2	1	3	4	3	7
Total admissions	435	338	773	317	286	603	101	39	140	7	9	16	10	4	14
	34	14	48	34	14	48	-	-	-	-	-	-	-	-	-
Total received during year	469	352	821	351	300	651	101	39	140	7	9	16	10	4	14
	1,866	1,851	3,717	1,742	1,797	3,539	104	40	144	7	9	16	13	5	18
Total on books during year															
Discharged from books during year:															
As recovered	44	56	100	20	34	54	20	17	37	1	4	5	3	1	4
	146	137	283	136	132	268	7	4	11	2	-	2	1	1	2
	20	22	42	18	20	38	62	12	74	1	2	3	8	-	8
As unimproved	74	17	91	3	3	6	90	34	124	4	6	10	13	3	16
	284	232	516	177	189	366	-	-	-	-	-	-	-	-	-
	7	15	22	7	15	22	-	-	-	-	-	-	-	-	-
As without psychosis	112	92	204	102	85	187	7	4	11	3	3	6	13	3	16
	403	339	742	286	289	575	97	38	135	7	9	16	13	3	16
Total discharged, transferred and died during year	1,213	1,206	2,419	1,206	1,202	2,408	7	2	9	-	-	-	-	2	2
	250	306	556	250	306	556	-	-	-	-	-	-	-	-	-
	1,463	1,512	2,975	1,456	1,508	2,964	7	2	9	-	-	-	-	2	2
Patients remaining on books of hospital at end of year:															
In hospital															
On visit or otherwise absent															
Total															

## SUPPLEMENTARY DATA

	Males		Females		Total
Average daily number of patients on books during year					
Actually in institution during year		1,428.69		1,511.29	2,939.98
In family care		1,181.62		1,201.04	2,382.66
On visit		42.33		89.42	131.75
On escape		199.41		219.50	418.91
Number of patients actually remaining in institution September 30, 1939		5.33		1.33	6.66
State					
Reimbursing		1,141		1,098	2,239
Ex-service patients paid by Federal Government		72		107	179
Number of non-insane patients in hospital at end of institution year:					
Mentally defective					
Others					

TABLE 3. *Nativity of First Admissions and of Parents of First Admissions*

NATIVITY	PATIENTS			PARENTS OF MALE PATIENTS			PARENTS OF FEMALE PATIENTS		
	M.	F.	T.	Fathers	Mothers	Both Parents	Fathers	Mothers	Both Parents
United States <sup>1</sup>	218	156	374	93	101	75	83	70	60
Austria	-	1	1	-	-	-	1	1	1
Canada <sup>2</sup>	31	18	49	56	52	45	34	37	25
China	2	1	3	1	2	1	-	-	-
Czecho-Slovakia	-	-	-	1	1	1	1	1	1
Denmark	-	-	-	-	-	-	1	-	-
England	3	8	11	9	6	5	10	11	7
Finland	3	1	4	7	6	6	2	2	2
France	1	-	1	1	1	1	1	-	-
Germany	-	2	2	1	1	1	5	6	5
Greece	1	-	1	2	2	2	-	-	-
Ireland	16	14	30	51	50	44	35	41	33
Italy	9	7	16	19	18	18	12	12	12
Norway	-	-	-	-	1	-	-	-	-
Poland	9	11	20	17	18	17	17	16	16
Portugal	1	-	1	2	3	2	-	-	-
Russia	5	1	6	10	8	8	5	5	5
Scotland	3	1	4	4	6	3	1	2	1
Spain	1	-	1	1	1	1	-	-	-
Sweden	5	3	8	10	10	9	5	6	4
Turkey in Asia	2	-	2	2	2	2	1	1	1
Wales	-	-	-	-	1	-	-	-	-
West Indies <sup>3</sup>	-	-	-	1	1	1	-	-	-
Other Countries	10	8	18	16	16	16	9	9	9
Unknown	-	-	-	16	13	11	9	12	9
Total	320	232	552	320	320	269	232	232	191

<sup>1</sup>Persons born in Hawaii, Porto Rico and the Virgin Islands should be recorded as born in the United States.

<sup>2</sup>Includes Newfoundland

<sup>3</sup>Except Cuba, Porto Rico and Virgin Islands.

TABLE 4. Age of First Admissions Classified with Reference to Nativity, and Length of Residence in the United States of the Foreign Born

AGE AT ADMISSION	Aggregate			NATIVE BORN						FOREIGN BORN						Unknown	
	Total			Parentage			Total			Time in United States before Admission							
				Foreign	Mixed	Native				Unknown	Under 5 years	5-9 years	10-14 years	15 years and over			
	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.			
0-14 years	4	1	5	4	1	5	1	4	1	2	9	1	1	1	1	1	-
15-19 years	17	10	27	16	8	24	1	4	5	20	1	1	1	1	2	2	4
20-24 years	35	18	53	35	17	52	8	5	13	15	5	2	3	2	2	1	3
25-29 years	26	22	48	23	20	43	4	6	10	8	9	2	2	1	2	2	4
30-34 years	26	17	43	24	16	40	4	3	7	5	12	2	2	1	1	1	-
35-39 years	28	23	51	16	16	32	11	7	18	4	6	10	1	1	2	3	15
40-44 years	25	20	45	22	12	34	12	4	16	10	4	14	2	3	8	11	-
45-49 years	24	7	31	18	5	23	4	2	6	4	6	5	2	3	8	11	-
50-54 years	23	14	37	9	10	19	4	3	7	2	4	6	2	2	4	6	2
55-59 years	22	11	33	10	3	13	3	4	7	2	5	4	1	1	1	3	8
60-64 years	19	16	35	7	9	16	2	1	3	2	5	7	1	1	1	3	16
65-69 years	15	21	36	5	12	17	2	7	9	3	6	10	1	1	1	7	19
70-74 years	22	21	43	14	12	26	7	6	13	5	6	10	8	9	9	17	-
75-79 years	19	16	35	9	9	18	4	2	6	4	3	7	5	6	6	15	1
80-84 years	7	11	18	2	5	7	3	3	6	1	3	4	4	3	5	11	1
85 years and over	8	4	12	4	1	5	2	2	4	2	1	3	1	1	1	4	7
Total	320	232	552	218	156	374	89	58	147	75	59	134	16	11	27	102	69 164
																2	2



TABLE 5. *Citizenship of First Admissions*

	M.	F.	T.
Citizens by birth . . . . .	219	157	376
Citizens by naturalization . . . . .	35	17	52
Aliens . . . . .	36	26	62
First Papers . . . . .	9	3	12
Citizenship unknown . . . . .	21	29	50
Total . . . . .	320	232	552

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses*

RACE	Total			With syphilitic meningo-encephalitis			With epidemic encephalitis			With other infectious diseases			Alcoholic psychoses			Due to drugs, etc.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black) . . . . .	5	4	9	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Armenian . . . . .	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chinese . . . . .	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
English . . . . .	8	7	15	1	-	1	-	-	-	1	1	-	-	-	-	-	-	-
Finnish . . . . .	7	2	9	-	1	1	-	-	-	-	-	-	2	-	2	-	-	1
French . . . . .	30	18	48	4	1	5	-	-	-	-	-	-	1	1	2	-	1	-
German . . . . .	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greek . . . . .	3	-	3	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hebrew . . . . .	9	6	15	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Irish . . . . .	46	33	79	2	-	2	-	-	-	-	-	-	8	1	9	-	-	-
Italian <sup>1</sup> . . . . .	20	12	32	2	-	2	1	-	1	-	-	-	1	1	2	-	-	-
Lithuanian . . . . .	13	7	20	-	-	-	1	-	1	-	-	-	3	2	5	-	-	-
Portuguese . . . . .	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scandinavian <sup>2</sup> . . . . .	9	4	13	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-
Scotch . . . . .	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Slavonic <sup>3</sup> . . . . .	20	15	35	4	-	4	-	-	-	1	1	-	2	1	3	-	-	-
Spanish . . . . .	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syrian . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Indian <sup>4</sup> . . . . .	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed . . . . .	129	108	237	7	7	14	1	1	2	-	1	1	8	2	10	1	4	5
Race unknown . . . . .	9	8	17	1	-	1	-	-	-	-	-	-	1	1	2	-	-	-
Total . . . . .	320	232	552	23	10	33	3	1	4	-	3	3	27	11	38	1	5	6

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses — Continued*

RACE	Traumatic psychoses			With cerebral arteriosclerosis			With other disturbances of circulation			With convulsive disorders (epilepsy)			Senile psychoses			Involuntional psychoses		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black) . . . . .	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Armenian . . . . .	-	-	-	-	-	-	-	-	-	1	-	1	-	1	1	-	1	1
Chinese . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
English . . . . .	-	-	-	2	4	6	-	-	-	-	-	-	1	1	2	-	-	-
Finnish . . . . .	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
French . . . . .	-	-	-	13	6	19	1	-	1	-	-	-	3	1	4	-	3	3
German . . . . .	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Greek . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hebrew . . . . .	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Irish . . . . .	2	2	4	19	17	36	-	1	1	-	-	-	1	4	5	2	1	3
Italian <sup>1</sup> . . . . .	-	-	-	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-
Lithuanian . . . . .	-	-	-	3	2	5	-	-	-	-	-	-	-	-	-	-	1	1
Portuguese . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scandinavian <sup>2</sup> . . . . .	-	-	-	2	-	2	1	-	1	1	-	1	-	1	1	1	-	1
Scotch . . . . .	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Slavonic <sup>3</sup> . . . . .	1	1	2	1	3	4	-	-	-	-	-	-	1	-	1	-	-	-
Spanish . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syrian . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Indian <sup>4</sup> . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed . . . . .	-	-	-	20	18	38	-	2	2	-	1	1	2	6	8	1	4	5
Race unknown . . . . .	-	-	-	3	3	6	-	-	-	-	-	-	2	1	3	-	-	-
Total . . . . .	3	-	3	71	59	130	2	3	5	2	1	3	10	15	25	4	10	14

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses — Continued*

RACE	Due to other metabolic diseases, etc.			Due to new growth			With organic changes of nervous system			Psycho-neuroses			Manic depressive psychoses			Dementia praecox		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	1	1
Armenian	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	1	1
Chinese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
English	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	3	—	3
Finnish	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	2	—	2
French	—	—	—	—	—	—	—	—	—	2	2	4	—	—	—	3	1	4
German	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	1	—	1
Greek	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hebrew	—	1	1	—	—	—	1	—	1	3	2	5	1	—	1	2	2	4
Irish	—	1	1	—	—	—	—	1	1	2	—	2	1	1	2	3	5	8
Italian <sup>1</sup>	—	—	—	—	—	—	—	—	—	1	—	1	—	1	1	2	6	8
Lithuanian	1	—	1	—	—	—	—	—	—	1	—	1	—	—	—	—	3	3
Portuguese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Scandinavian <sup>2</sup>	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	2	1	3
Scotch	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Slavonic <sup>3</sup>	1	—	1	—	—	—	—	1	1	1	1	2	1	2	3	5	5	10
Spanish	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syrian	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
West Indian <sup>4</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Mixed	2	5	7	1	1	2	—	—	—	7	8	15	2	5	7	38	28	66
Race unknown	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3	5
Total	6	7	13	1	1	2	2	2	4	19	16	35	5	9	14	67	57	124

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses — Concluded*

RACE	Paranoia and paranoid conditions			With psychopathic personality			With mental deficiency			Undiagnosed psychoses			Without psychoses			Primary behavior disorders		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	—	—	—	—	1	1	—	—	—	—	—	—	2	1	3	—	—	—
Armenian	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chinese	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
English	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Finnish	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2	—	—	—
French	—	—	—	—	—	—	1	—	1	—	1	1	1	1	2	—	—	—
German	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Greek	1	—	1	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—
Hebrew	—	—	—	—	—	—	—	—	2	—	2	—	—	—	—	—	—	—
Irish	—	—	—	—	—	—	2	—	2	—	—	—	4	1	5	—	—	—
Italian <sup>1</sup>	2	—	2	—	—	—	2	1	3	—	—	—	5	—	5	—	—	—
Lithuanian	—	—	—	—	—	—	1	—	1	—	—	—	3	—	3	—	—	—
Portuguese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scandinavian <sup>2</sup>	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Scotch	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1
Slavonic <sup>3</sup>	—	—	—	—	—	—	1	—	1	—	1	1	2	—	2	—	—	—
Spanish	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syrian	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
West Indian <sup>4</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mixed	—	1	1	1	3	4	5	1	6	—	—	—	30	9	39	3	1	4
Race unknown	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3	1	4	1	4	5	13	2	15	—	2	2	53	12	65	4	1	5

<sup>1</sup>Includes "North" and "South".<sup>2</sup>Norwegians, Danes and Swedes.<sup>3</sup>Includes Bohemian, Bosnian, Croatian, Dalmatian, Herzegovinian, Montenegrin, Moravian, Polish, Russian, Ruthenian, Servian, Slovak, Slovenian.<sup>4</sup>Except Cuba.

TABLE 7. Age of First Admissions Classified with Reference to Principal Psychoses

PSYCHOSES	Total			0-14 years			15-19 years			20-24 years			25-29 years			30-34 years			35-39 years			40-44 years		
	T.			M. F. T.			M. F. T.			M. F. T.			M. F. T.			M. F. T.			M. F. T.			M. F. T.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	23	10	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	6
With epidemic encephalitis . . . . .	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With other infectious diseases . . . . .	27	11	38	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	5	5	10	5	2	7
Alcoholic psychoses . . . . .	-	1	1	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-
Due to drugs, etc. . . . .	3	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traumatic psychoses . . . . .	71	59	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With cerebral arteriosclerosis . . . . .	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-
With other disturbances of circulation . . . . .	12	3	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With convulsive disorders (epilepsy) . . . . .	10	15	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senile psychoses . . . . .	4	10	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Involutional psychoses . . . . .	6	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Due to other metabolic diseases, etc. . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
Due to new growth . . . . .	2	10	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system . . . . .	19	16	35	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Psychoneuroses . . . . .	5	9	14	-	-	-	-	-	-	3	5	8	2	4	6	-	-	-	3	3	6	-	-	3
Manic-depressive psychoses . . . . .	67	57	124	-	-	-	-	-	-	-	-	-	2	2	4	1	2	3	1	1	2	6	9	15
Dementia praecox . . . . .	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paranoia and paranoid conditions . . . . .	13	2	15	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-
With psychopathic personality . . . . .	53	12	65	-	-	-	-	-	-	-	-	-	2	1	3	1	1	1	-	-	-	-	-	-
With mental deficiency . . . . .	4	1	5	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-
Undiagnosed psychoses . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	6	1	7	7	1	8	-	-	-	4	1	4
Without psychoses . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	2	1	2	1	1	1	-	-	-	1	-	-
Primary behavior disorders . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total . . . . .	320	232	552	4	1	5	17	10	27	35	18	53	26	22	48	26	17	43	28	23	51	25	20	45



TABLE 7. Age of First Admissions Classified with Reference to Principal Psychoses — Concluded.

PSYCHOSES	45-49 years		50-54 years		55-59 years		60-64 years		65-69 years		70-74 years		75-79 years		80-84 years		85 years and over	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
With syphilitic meningo-encephalitis	6	1	2	2	3	1	1	2	—	—	—	—	—	—	—	—	—	—
With epidemic encephalitis	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
With other infectious diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholic psychoses	6	—	7	2	—	—	1	2	—	—	—	—	—	—	—	—	—	—
Due to drugs, etc.	—	—	—	—	2	—	1	1	2	2	—	—	1	1	—	—	—	—
Traumatic psychoses	—	—	—	—	4	—	4	17	9	15	—	—	11	26	5	7	12	8
With cerebral arteriosclerosis	—	—	—	—	1	1	1	1	1	24	18	15	—	—	—	—	—	—
With other disturbances of circulation	—	—	—	—	4	4	8	—	—	—	—	—	—	—	—	—	—	—
With convulsive disorders (epilepsy)	—	—	—	—	1	1	1	—	1	1	—	—	—	—	—	—	—	—
Senile psychoses	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Involutional psychoses	—	1	1	2	—	—	—	3	1	1	1	3	3	6	2	4	6	3
Due to other metabolic diseases, etc.	2	—	—	—	1	1	2	2	1	1	1	1	1	1	—	—	—	—
Due to new growth	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With organic changes of nervous system	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—
Psychoneuroses	1	—	3	1	4	1	—	1	1	1	—	—	—	—	—	—	—	—
Manic-depressive psychoses	—	2	1	1	2	1	2	—	—	—	—	—	—	—	—	—	—	—
Dementia praecox	5	3	1	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Paranoia and paranoid conditions	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
With psychopathic personality	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With mental deficiency	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Undiagnosed psychoses	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without psychoses	4	—	5	1	5	—	2	1	1	—	1	—	—	—	—	—	—	—
Primary behavior disorders	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	24	7	23	14	22	11	19	16	15	21	22	21	19	16	7	11	8	12



TABLE 9. *Environment of First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			0-2,499			2,500-9,999			10,000-24,999			25,000-49,999			50,000-99,999			100,000-249,999			500,000			Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	23	10	33	1	1	1	1	1	1	3	1	4	2	-	2	1	1	2	14	7	21	1	-	1	-	-	-
With epidemic encephalitis . . . . .	3	1	4	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-
With other infectious diseases . . . . .	-	3	3	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	-	-
Alcoholic psychoses . . . . .	27	11	38	2	1	3	3	2	5	4	3	7	1	-	1	-	-	-	15	4	19	1	-	1	-	1	2
Due to drugs, etc. . . . .	1	5	6	-	-	-	1	1	1	-	1	1	-	-	-	-	-	-	4	4	4	-	-	-	-	-	-
Traumatic psychoses . . . . .	3	-	3	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
With cerebral arteriosclerosis . . . . .	71	59	130	7	3	10	12	6	18	5	8	13	4	4	8	-	1	1	41	37	78	1	2	2	1	-	-
With other disturbances of circulation . . . . .	2	3	5	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	-	-	-	-	-	-
With convulsive disorders (epilepsy) . . . . .	2	3	5	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-
Semile psychoses . . . . .	10	15	25	-	1	1	2	3	5	2	3	3	1	-	1	-	1	-	5	5	11	-	-	-	-	-	-
Involutional psychoses . . . . .	4	10	14	-	-	-	2	2	2	2	2	2	4	-	-	-	-	-	2	7	9	-	-	-	-	-	-
Due to other metabolic diseases, etc. . . . .	6	7	13	1	1	1	1	1	2	-	-	-	-	-	-	-	-	-	3	3	6	-	-	-	-	-	-
Due to new growth . . . . .	1	1	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	1	2	3	-	-	-	-	-	-
With organic changes of nervous system . . . . .	19	16	35	-	-	-	3	3	6	3	3	6	4	2	6	-	-	-	8	8	16	1	-	1	-	-	-
Psychoneuroses . . . . .	5	9	14	-	-	-	1	1	1	1	1	1	1	-	1	-	-	-	1	5	4	9	-	-	-	-	-
Manic-depressive psychoses . . . . .	67	57	124	4	4	8	12	9	21	5	10	15	5	1	6	3	2	5	30	27	57	2	4	6	6	-	6
Dementia praecox . . . . .	3	1	4	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	2	1	3	-	-	-	-	-	-
Paranoia and paranoid conditions . . . . .	13	2	15	1	-	-	1	-	-	-	1	1	-	-	-	-	-	-	1	3	4	-	-	-	-	-	-
With psychopathic personality . . . . .	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3	-	-	-	-	-	-
With mental deficiency . . . . .	-	2	2	-	-	-	1	-	2	-	-	-	3	-	3	-	-	-	6	2	8	-	-	-	-	1	1
Undiagnosed psychoses . . . . .	53	12	65	9	1	10	8	1	9	-	4	-	1	1	2	1	2	3	28	7	35	1	-	1	-	1	-
Without psychoses . . . . .	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5	-	-	-	-	-	-
Primary behavior disorders . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total . . . . .	320	232	552	27	13	40	50	29	79	28	37	65	22	8	30	6	6	12	169	134	303	9	4	13	9	1	10



TABLE 10. *Economic Condition of First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			Dependent			Marginal			Comfortable			Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . .	23	10	33	6	2	8	15	7	22	-	-	-	2	1	3
With epidemic encephalitis . . .	3	1	4	1	-	1	1	1	2	-	-	-	1	-	1
With other infectious diseases . . .	-	3	3	-	-	-	-	3	3	-	-	-	-	-	-
Alcoholic psychoses . . .	27	11	38	7	3	10	19	6	25	-	-	-	1	2	3
Due to drugs, etc. . .	1	5	6	-	-	-	1	5	6	-	-	-	-	-	-
Traumatic psychoses . . .	3	-	3	2	-	2	1	-	1	-	-	-	-	-	-
With cerebral arteriosclerosis . . .	71	59	130	29	26	55	29	26	55	-	-	-	13	7	20
With other disturbances of circulation . . .	2	3	5	-	1	1	2	1	3	-	-	-	-	1	1
With convulsive disorders (epilepsy) . . .	2	1	3	-	1	1	2	-	2	-	-	-	-	-	-
Senile psychoses . . .	10	15	25	6	3	9	1	9	10	-	-	-	3	3	6
Involutional psychoses . . .	4	10	14	-	1	1	4	7	11	-	-	-	-	2	2
Due to other metabolic diseases, etc. . .	6	7	13	2	2	4	2	5	7	-	-	-	2	-	2
Due to new growth . . .	1	1	2	-	-	-	1	1	2	-	-	-	-	-	-
With organic changes of nervous system . . .	2	2	4	-	1	1	1	-	1	-	-	-	1	1	2
Psychoneuroses . . .	19	16	35	6	5	11	13	11	24	-	-	-	-	-	-
Manic-depressive psychoses . . .	5	9	14	-	1	1	5	8	13	-	-	-	-	-	-
Dementia praecox . . .	67	57	124	18	12	30	44	42	86	-	-	-	5	3	8
Paranoia and paranoid conditions . . .	3	1	4	2	-	2	1	1	2	-	-	-	-	-	-
With psychopathic personality . . .	1	4	5	-	3	3	1	1	2	-	-	-	-	-	-
With mental deficiency . . .	13	2	15	6	1	7	5	1	6	-	-	-	2	-	2
Undiagnosed psychoses . . .	-	2	2	-	1	1	-	1	1	-	-	-	-	-	-
Without psychoses . . .	53	12	65	17	6	23	30	4	34	1	-	1	5	2	7
Primary behavior disorders . . .	4	1	5	2	1	3	2	-	2	-	-	-	-	-	-
Total . . .	320	232	552	104	70	174	180	140	320	1	-	1	35	22	57

TABLE 11. *Use of Alcohol by First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			Abstinent			Temperate			Intemperate			Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . .	23	10	33	-	5	5	18	3	21	3	-	3	2	2	4
With epidemic encephalitis . . .	3	1	4	1	1	2	1	-	1	1	-	1	-	-	-
With other infectious diseases . . .	-	3	3	-	3	3	-	-	-	-	-	-	-	-	-
Alcoholic psychoses . . .	27	11	38	-	-	-	-	-	-	27	11	38	-	-	-
Due to drugs, etc. . .	1	5	6	-	4	4	1	1	2	-	-	-	-	-	-
Traumatic psychoses . . .	3	-	3	1	-	1	-	-	-	2	-	2	-	-	-
With cerebral arteriosclerosis . . .	71	59	130	22	34	56	31	14	45	10	1	11	8	10	18
With other disturbances of circulation . . .	2	3	5	-	3	3	1	-	1	1	-	1	-	-	-
With convulsive disorders (epilepsy) . . .	2	1	3	-	1	1	1	-	1	1	-	1	-	-	-
Senile psychoses . . .	10	15	25	3	8	11	3	3	6	1	1	2	3	3	6
Involutional psychoses . . .	4	10	14	2	5	7	1	3	4	-	-	-	1	2	3
Due to other metabolic diseases, etc. . .	6	7	13	-	4	4	2	2	4	4	-	4	-	1	1
Due to new growth . . .	1	1	2	-	1	1	2	-	-	1	-	1	-	-	-
With organic changes of nervous system . . .	2	2	4	1	1	2	1	-	1	-	-	-	-	1	1
Psychoneuroses . . .	19	16	35	7	10	17	8	4	12	4	2	6	-	-	-
Manic-depressive psychoses . . .	5	9	14	1	7	8	2	2	4	2	-	2	-	-	-
Dementia praecox . . .	67	57	124	21	27	48	30	22	52	13	4	17	3	4	7
Paranoia and paranoid conditions . . .	3	1	4	-	1	1	2	-	2	1	-	1	-	-	-
With psychopathic personality . . .	1	4	5	-	-	-	-	4	4	1	-	1	-	-	-
With mental deficiency . . .	13	2	15	6	2	8	5	-	5	2	-	2	-	-	-
Undiagnosed psychoses . . .	-	2	2	-	1	1	-	1	1	-	-	-	-	-	-
Without psychoses . . .	53	12	65	10	4	14	22	4	26	21	3	24	-	1	1
Primary behavior disorders . . .	4	1	5	-	1	1	4	-	4	-	-	-	-	-	-
Total . . .	320	232	552	75	123	198	133	63	196	95	22	117	17	24	41

TABLE 12. *Marital Condition of First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			Single		Married		Widowed		Divorced		Separated		Unknown	
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	23	10	33	9	-	9	7	1	8	2	-	2	-	-	-
With epidemic encephalitis	3	1	4	2	-	2	1	1	2	-	-	-	-	-	-
With other infectious diseases	-	3	3	-	-	-	3	3	3	-	-	-	-	-	-
Alcoholic psychoses	27	11	38	14	-	14	11	7	18	1	1	2	3	-	-
Due to drugs, etc.	1	5	6	-	-	-	-	1	1	-	-	-	-	-	-
Traumatic psychoses	3	-	3	3	-	3	-	1	1	-	-	-	-	-	-
With cerebral arteriosclerosis	71	59	130	18	12	30	27	17	44	24	28	52	1	1	-
With other disturbances of circulation	2	3	5	-	-	-	2	1	1	-	-	-	-	-	-
With convulsive disorders (epilepsy)	2	1	3	1	1	2	1	1	1	-	-	-	-	-	-
Senile psychoses	10	15	25	1	2	3	5	6	11	4	7	11	-	-	-
Involutional psychoses	4	10	14	1	1	2	2	7	9	1	3	4	1	-	-
Due to other metabolic diseases, etc.	6	7	13	1	3	4	1	4	5	3	1	-	-	-	-
Due to new growth	1	1	2	-	-	-	-	1	1	-	-	-	-	-	-
With organic changes of nervous system	2	2	4	2	1	3	-	3	1	-	-	-	-	-	-
Psychoneuroses	19	16	35	11	4	15	7	11	18	-	-	-	-	-	-
Manic-depressive psychoses	5	9	14	1	2	3	2	6	8	-	-	-	-	-	-
Dementia praecox	67	57	124	50	26	76	13	24	37	2	2	4	6	-	-
Paranoia and paranoid conditions	3	4	7	1	1	2	2	1	1	-	-	-	-	-	-
With psychopathic personality	1	1	2	1	1	2	-	-	-	-	-	-	-	-	-
With mental deficiency	13	2	15	13	2	15	-	-	-	-	-	-	-	-	-
Undiagnosed psychoses	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Without psychoses	53	12	65	28	7	35	18	3	21	2	2	-	-	-	-
Primary behavior disorders	4	1	5	3	-	3	1	1	2	-	-	-	-	-	-
Total . . . . .	320	232	552	159	63	222	102	104	206	45	52	97	4	7	11
										9	6	15		1	-

TABLE 13. *Mental Disorders of All Admissions, All Discharges, All Deaths, 1939, All Cases in Residence and All Cases Out on September 30, 1939, by Status of Admission and Sex*

MENTAL DISORDERS	ALL ADMISSIONS			ALL DISCHARGES			ALL DEATHS			RESIDENT POPULATION			PATIENTS OUT ON VISIT, ETC.											
	First Admissions	Readmissions	M. F. T.	First Admissions	Readmissions	M. F. T.	First Admissions	Readmissions	M. F. T.	First Admissions	Readmissions	M. F. T.	First Admissions	Readmissions	M. F. T.									
<i>Psychoses Due to or Associated with Infection:</i>	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.									
Syphilis of the Central Nervous System: meningoencephalitic type (general paresis)	23	10	33	7	3	10	11	3	14	3	1	4	85	33	118	26	8	34	14	7	21	1	1	2
Meningo-vascular type (cerebral syphilis)	-	-	-	1	-	1	-	-	-	1	-	1	3	1	4	-	1	1	-	-	-	1	1	2
With intracranial gumma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
Other types	-	-	-	2	2	1	-	1	-	1	-	1	1	2	5	7	2	2	1	-	1	2	-	2
With epidemic encephalitis	3	1	4	-	-	-	2	1	3	-	-	-	3	3	6	4	3	7	2	1	3	1	-	1
With acute chorea (Sydenham's)	-	1	1	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	2	2	-	-	-
With other infectious disease	-	2	2	-	-	-	1	1	2	-	-	-	-	-	1	-	1	1	-	2	2	-	-	-
Post-infectious psychoses	-	-	-	-	1	1	-	1	1	-	-	-	-	1	1	-	1	1	-	-	-	-	-	-
<i>Psychoses Due to Intoxication:</i>																								
Due to Alcohol:																								
Pathological intoxication	-	2	2	-	-	-	-	2	2	-	-	-	1	-	1	-	3	-	3	2	2	3	-	-
Delirium tremens	5	3	8	1	-	1	4	1	5	1	-	1	-	3	3	6	1	1	2	3	1	4	-	-
Korsakow's psychosis	1	1	2	1	-	1	1	-	1	2	1	3	-	1	4	15	4	4	6	1	4	-	-	-
Acute hallucinosis	6	3	9	2	-	2	10	1	11	1	-	1	-	11	4	15	4	4	6	1	6	1	-	1
Other types	15	2	17	9	1	10	16	1	17	10	1	11	2	-	2	1	-	1	1	17	9	1	10	1
Due to Drugs or Other Exogenous Poisons:																								
Due to gases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Due to other drugs	1	5	6	1	-	1	1	7	8	2	1	3	-	-	-	-	1	1	1	2	3	-	-	-
<i>Psychoses Due to Trauma:</i>																								
Traumatic delirium	-	-	-	-	-	-	1	-	1	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-
Post-traumatic personality disorders	1	-	1	-	-	-	-	-	-	1	-	1	-	1	-	1	1	1	2	-	2	-	-	-
Post-traumatic mental deterioration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other types	1	-	1	-	1	1	-	1	1	2	2	1	3	-	3	-	1	1	1	1	1	-	-	-
Other types	1	-	1	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-
<i>Psychoses Due to Disturbance of Circulation:</i>																								
With cerebral arteriosclerosis	71	59	130	4	10	14	11	12	23	1	4	5	73	70	143	14	18	32	14	19	33	-	5	5
With cerebral embolism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
With cardio-renal disease	1	-	1	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-
Other type	1	3	4	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
<i>Psychoses Due to Convulsive Disorders (Epilepsy):</i>																								
Epileptic deterioration	2	-	2	1	-	1	-	-	-	1	-	1	-	4	2	6	6	2	6	1	-	1	-	1
Epileptic clouded states	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other epileptic types	-	1	1	1	1	2	1	1	1	-	-	-	1	1	1	2	2	1	3	-	1	-	-	-



TABLE 13. *Mental Disorders of All Admissions, All Discharges, All Deaths, 1939, All Cases in Residence and All Cases Out on September 30, 1939, by Status of Admission and Sex — Concluded*

MENTAL DISORDERS	ALL ADMISSIONS			ALL DISCHARGES			ALL DEATHS		RESIDENT POPULATION		PATIENTS OUT ON VISIT, ETC.		
	First Admissions	Readmissions		First Admissions	Readmissions		First Admissions	Readmissions	First Admissions	Readmissions	First Admissions	Readmissions	
	M. F. T.	M. F. T.		M. F. T.	M. F. T.		M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	M. F. T.	
<i>Psychoses Due to Disturbances of Metabolism, Growth, Nutrition or Endocrine Functions:</i>													
Senile Psychoses:													
Simple deterioration . . .	6	6	12	1	2	3	—	3	3	1	2	4	6
Presbyophrenic type . . .	—	3	3	—	—	—	—	—	—	—	—	—	—
Delirious and confused types . . .	3	3	3	—	—	—	—	—	—	—	—	—	—
Depressed and agitated types . . .	—	5	5	1	—	1	—	1	1	4	7	11	—
Paranoid types . . .	1	1	2	—	—	—	—	1	3	6	19	25	—
<i>Involutional psychoses:</i>													
Melancholia . . .	3	7	10	2	6	8	—	1	—	9	19	28	—
Paranoid types . . .	2	2	4	—	4	4	—	1	—	3	5	6	—
Other types . . .	1	1	2	—	2	2	—	—	—	3	5	8	—
With diseases of the endocrine glands . . .	—	2	2	—	—	—	—	—	—	—	—	—	—
Exhaustion delirium . . .	1	1	2	—	—	—	—	1	1	—	—	—	—
Alzheimer's disease . . .	—	—	—	—	—	—	—	—	—	—	—	—	—
With other somatic diseases . . .	5	4	9	—	5	1	6	—	6	3	9	1	—
<i>Psychoses Due to New Growth:</i>													
With intracranial neoplasms . . .	—	1	1	—	1	1	—	—	—	—	—	—	—
With other neoplasms . . .	1	—	1	—	—	—	—	1	—	—	—	—	—
<i>Psychoses Due to Unknown or Hereditary Causes, but Associated with Organic Changes:</i>													
With multiple sclerosis . . .	—	—	—	—	—	—	—	—	—	—	—	—	—
With Huntington's chorea . . .	—	—	1	1	—	—	—	—	2	2	—	—	—
With other brain or nervous diseases . . .	2	2	4	1	1	2	1	—	1	1	2	4	7
<i>Disorders of Psychogenic Origin or Without Clearly Defined Tangible Cause or Structural Change:</i>													
Psychoneuroses:													
Anxiety hysteria . . .	2	1	3	—	—	—	1	3	4	—	—	—	—
Conversion hysteria:													
Paralytic type . . .	—	1	1	—	—	—	—	—	—	1	—	—	1
Hyperkinetic type . . .	—	1	1	—	—	—	—	—	—	—	—	—	—
Autonomic type . . .	—	—	—	—	—	—	—	—	—	—	—	—	—
Mixed hysterical psychoneurosis . . .	—	—	—	—	—	—	—	—	—	—	—	—	—
Psychasthenia or compulsive states:	1	2	3	—	—	—	1	1	2	1	—	1	—
Obsession . . .	—	—	—	—	—	—	—	—	—	—	—	—	—
Phobia . . .	1	1	2	—	1	1	2	—	—	—	—	—	—
Mixed convulsive states . . .	1	—	1	—	1	—	—	—	—	—	—	—	—

[illegible]

**NOTE: — Admissions and discharges do not include transfers.**

TABLE 14. *Discharges of Patients Classified with Reference to Principal Psychoses and Condition on Discharge*

PSYCHOSES	TOTAL			Recovered			Improved			Unimproved		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	14	4	18	-	-	-	12	3	15	2	1	3
With other forms of syphilis . . . . .	2	-	2	-	-	-	2	-	2	-	-	-
With epidemic encephalitis . . . . .	2	1	3	1	-	1	1	1	2	-	-	-
With other infectious diseases . . . . .	1	2	3	-	1	1	1	1	2	-	-	-
Alcoholic psychoses . . . . .	43	6	49	15	4	19	26	1	27	2	1	3
Due to drugs, etc. . . . .	3	8	11	1	5	6	2	2	4	-	1	1
Traumatic psychoses . . . . .	4	1	5	-	-	-	3	-	3	1	1	2
With cerebral arteriosclerosis . . . . .	12	16	28	2	2	4	10	11	21	-	3	3
With other disturbances of circulation . . . . .	1	1	2	-	1	1	1	-	1	-	-	-
With convulsive disorders (epilepsy) . . . . .	2	1	3	-	-	-	2	1	3	-	-	-
Senile psychoses . . . . .	1	5	6	-	1	1	1	4	5	-	-	-
Involuntary psychoses . . . . .	2	15	17	-	2	2	2	13	15	-	-	-
Due to other metabolic diseases, etc. . . . .	5	2	7	2	1	3	3	1	4	-	-	-
Due to new growth . . . . .	-	1	1	-	-	-	-	1	1	-	-	-
With organic changes of nervous system . . . . .	2	3	5	-	-	-	2	3	5	-	-	-
Psychoneuroses . . . . .	21	17	38	11	11	22	9	6	15	1	-	1
Manic-depressive psychoses . . . . .	12	32	44	4	14	18	8	17	25	-	1	1
Dementia praecox . . . . .	62	81	143	5	9	14	45	62	107	12	10	22
Paranoia and paranoid conditions . . . . .	10	7	17	-	1	1	10	4	14	-	2	2
With psychopathic personality . . . . .	4	5	9	-	2	2	3	3	6	1	-	1
With mental deficiency . . . . .	4	5	9	1	2	3	2	3	5	1	-	1
Without psychoses . . . . .	74	17	91	-	-	-	-	-	-	-	-	-
Primary behavior disorders . . . . .	3	2	5	2	-	2	1	-	1	-	2	2
Total . . . . .	284	232	516	44	56	100	146	137	283	20	22	42

TABLE 15. *Hospital Residence During This Admission of First Admissions Discharged During 1939*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	11	3	14	.48	1.05	8.46
With other forms of syphilis . . . . .	1	-	1	.54	-	.54
With epidemic encephalitis . . . . .	2	1	3	4.10	.29	2.83
With other infectious diseases . . . . .	1	2	3	7.50	.12	2.58
Alcoholic psychoses . . . . .	31	5	36	.52	.08	.46
Due to drugs, etc. . . . .	1	7	8	.62	.16	.22
Traumatic psychoses . . . . .	1	1	2	1.50	.20	.85
With cerebral arteriosclerosis . . . . .	11	12	23	.36	.44	.40
With other disturbances of circulation . . . . .	1	1	2	.54	.71	.62
With convulsive disorders (epilepsy) . . . . .	1	1	2	.20	.20	.20
Senile psychoses . . . . .	-	3	3	-	.80	.80
Involuntary psychoses . . . . .	2	13	15	1.48	1.36	1.38
Due to other metabolic diseases, etc. . . . .	5	2	7	.53	.98	.65
Due to new growth . . . . .	-	1	1	-	.04	.04
With organic changes of nervous system . . . . .	1	-	1	.12	-	.12
Psychoneuroses . . . . .	16	14	30	.13	.16	.15
Manic-depressive psychoses . . . . .	5	16	21	.28	1.17	.96
Dementia praecox . . . . .	31	51	82	1.06	1.09	1.08
Paranoia and paranoid conditions . . . . .	9	5	14	.50	.87	.63
With psychopathic personality . . . . .	1	2	3	1.50	.12	.58
With mental deficiency . . . . .	1	2	3	1.50	.33	.72
Without psychoses . . . . .	52	12	64	.09	.09	.09
Primary behavior disorders . . . . .	3	2	5	.09	.45	.23
Total . . . . .	187	156	343	.44	.59	.51



TABLE 16. Causes of Death of Patients Classified with Reference to Principal Mental Disorders

CAUSES OF DEATH	TOTAL		With syphilitic meningoenzephalitis		With other forms of syphilis		Alcoholic psychoses		Traumatic psychoses		With cerebral arterio-sclerosis		With other disturbances of circulation		Senile psychoses		Involuntional psychoses								
	M.	F.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.					
<i>Infectious and Parasitic Diseases:</i>																									
Tuberculosis of the respiratory system	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Disseminated tuberculosis	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Syphilis (non-nervous forms)	4	-	4	1	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-					
<i>Cancer and Other Tumors</i>																									
Cancer and other malignant tumors	8	3	11	-	-	-	-	1	1	-	-	2	-	2	-	2	1	3	-	-					
<i>Rheumatic Diseases, Nutritional Diseases, Diseases of the Endocrine Glands and Other General Diseases:</i>																									
Diabetes	1	4	5	-	-	-	-	-	-	-	-	-	2	2	-	-	1	1	-	-					
Diseases of the thyroid and parathyroid glands	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
<i>Diseases of the Blood and Blood-Making Organs:</i>																									
Hemorrhagic conditions	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1					
<i>Diseases of the Nervous System and Organs of Special Sense:</i>																									
Other diseases of the spinal cord	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Cerebral hemorrhage	5	8	13	-	-	-	-	-	-	-	-	4	5	9	-	-	1	1	-	-					
Cerebral embolism and thrombosis	1	-	1	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-					
General paralysis of the insane	15	3	18	14	2	16	1	1	2	-	-	-	-	-	-	-	-	-	-	-					
Epilepsy	1	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-					
<i>Diseases of the Circulatory System:</i>																									
Diseases of the myocardium	1	3	4	-	-	-	-	-	-	-	-	1	1	2	-	-	1	1	-	-					
Diseases of the coronary arteries and angina pectoris	9	3	12	-	-	-	-	1	1	-	-	6	1	7	-	2	2	2	-	-					
Other diseases of the heart	3	2	5	-	-	-	-	-	1	-	-	1	3	1	1	1	1	1	-	-					
Arteriosclerosis	19	17	36	-	-	-	-	-	1	1	-	15	9	24	-	1	3	4	-	-					
Gangrene	1	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-					
Other diseases of the arteries	1	1	1	-	-	-	-	1	1	-	-	1	1	1	-	-	-	-	-	-					
<i>Diseases of the Respiratory System:</i>																									
Bronchitis	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-					
Bronchopneumonia (including capillary bronchitis)	20	24	44	-	-	-	-	1	1	-	-	9	12	21	-	7	6	13	-	-					
Lobar pneumonia	4	6	10	-	-	-	-	1	1	-	-	2	2	4	-	2	2	2	-	-					
Other diseases (tuberculosis excepted)	1	-	1	-	-	-	-	1	1	-	-	1	2	4	-	1	1	1	-	-					
<i>Diseases of the Digestive System:</i>																									
Ulcer of the stomach and duodenum	1	-	1	-	-	-	-	-	1	-	-	1	1	1	-	-	-	-	-	-					
Other diseases of the intestines	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-					
Girrhosis of the liver	5	1	5	-	-	-	-	1	1	-	-	2	1	1	-	-	-	-	-	-					
Peritonitis	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Other diseases (cancer excepted)	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
<i>Diseases of the Genito-Urinary System:</i>																									
Nephritis (acute, chronic and unspecified)	4	5	9	-	-	-	-	-	-	-	-	4	3	7	-	-	-	-	-	-					
Other diseases of the kidneys and ureters (puerperal diseases excepted)	2	2	4	-	-	-	-	-	-	-	-	2	1	3	-	-	1	1	-	-					
Calculi of the urinary passages	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
<i>Violent and Accidental Deaths:</i>																									
Conflagration and accidental burns	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Other external causes	1	3	4	-	-	-	-	-	-	-	-	-	2	2	-	-	1	1	-	-					
<i>Ill-Defined Causes of Death:</i>																									
Total	112	92	204	15	2	17	1	1	2	6	1	7	1	1	53	41	94	1	1	2	13	17	30	1	1



TABLE 17. Age of Patients at Time of Death Classified with Reference to Principal Psychoses

Psychoses	TOTAL			20-24 years			25-29 years			30-34 years			35-39 years			40-44 years			45-49 years		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	15	2	17	-	-	-	-	-	-	-	-	-	1	-	1	3	-	3	3	-	3
With other forms of syphilis . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Alcoholic psychoses . . . . .	6	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traumatic psychoses . . . . .	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With cerebral arteriosclerosis . . . . .	53	41	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
With other disturbances of circulation . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senile psychoses . . . . .	13	17	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Involuntal psychoses . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Due to other metabolic diseases, etc. . . . .	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-
Due to new growth . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system . . . . .	4	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychoneuroses . . . . .	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manic-depressive psychoses . . . . .	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dementia praecox . . . . .	10	16	26	-	1	1	-	1	-	-	-	3	3	-	-	1	1	-	-	-	-
Paranoia and paranoid conditions . . . . .	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With psychopathic personality . . . . .	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With mental deficiency . . . . .	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total . . . . .	112	92	204	-	1	1	1	-	1	-	3	3	1	-	1	4	2	6	3	2	5



TABLE 17. Age of Patients at Time of Death Classified with Reference to Principal Psychoses — Concluded

Psychoses	50-54 years			55-59 years			60-64 years			65-69 years			70-74 years			75-79 years			80-84 years			85 years and over		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	2	2	4	4	-	4	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With other forms of syphilis . . . . .	-	1	1	1	-	1	2	-	2	-	1	-	-	1	1	2	-	-	-	-	1	-	-	-
Alcoholic psychoses . . . . .	1	-	1	1	-	1	2	-	2	-	1	-	-	1	1	2	-	-	-	-	-	1	-	-
Traumatic psychoses . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With cerebral arteriosclerosis . . . . .	-	-	-	-	-	1	11	4	15	6	7	13	7	10	17	15	7	22	8	9	17	6	2	8
With other disturbances of circulation . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senile psychoses . . . . .	-	-	-	-	-	-	-	1	1	1	3	4	2	4	6	5	3	8	1	5	6	2	1	2
Involuntary psychoses . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Due to other metabolic diseases, etc. . . . .	-	-	-	-	-	1	1	1	1	1	1	1	1	1	2	1	-	-	-	-	-	-	-	-
Due to new growth . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system . . . . .	1	-	1	-	-	-	2	1	2	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-
Psychoneuroses . . . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manic-depressive psychoses . . . . .	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dementia praecox . . . . .	-	1	1	1	1	1	2	1	1	-	-	-	-	-	-	1	1	2	1	-	1	-	-	-
Paranoia and paranoid conditions . . . . .	2	2	4	2	2	4	2	1	3	-	3	3	-	1	1	1	1	2	-	-	2	-	-	-
With psychopathic personality . . . . .	-	1	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
With mental deficiency . . . . .	-	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total . . . . .	6	7	13	9	4	13	20	10	30	13	15	28	11	18	29	23	12	35	12	14	26	9	4	13

TABLE 18. *Total Duration of Hospital Life of Patients Dying in Hospital During All Admissions Classified According to Principal Psychoses*

PSYCHOSES	TOTAL			Less than 1 month			1-3 months			4-7 months			8-12 months			1-2 years			3-4 years		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis . . . . .	15	2	17	2	4	6	2	4	6	3	2	5	1	1	2	3	1	4	2	1	3
With other forms of syphilis . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Alcoholic psychoses . . . . .	6	1	7	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Traumatic psychoses . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With cerebral arteriosclerosis . . . . .	53	41	94	16	11	27	5	21	26	11	8	19	2	4	6	6	7	13	4	2	6
With other disturbances of circulation . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Senile psychoses . . . . .	13	17	30	3	1	4	3	1	4	1	1	2	4	3	7	2	5	7	1	2	3
Involutional psychoses . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Due to other metabolic diseases, etc. . . . .	3	4	7	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Due to new growth . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With organic changes of nervous system . . . . .	4	1	5	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Psychoneuroses . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Manic-depressive psychoses . . . . .	3	3	6	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Dementia praecox . . . . .	10	16	26	3	3	6	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Paranoia and paranoid conditions . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With psychopathic personality . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With mental deficiency . . . . .	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Total . . . . .	112	92	204	26	19	45	9	35	44	15	13	28	7	7	14	15	14	29	7	7	14





TABLE 19. *Average Length of Hospital Residence During the Present Admission of First Admissions in Residence on September 30, 1939*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	85	33	118	5.61	6.76	5.93
With other forms of syphilis	5	6	11	8.70	8.50	8.59
With epidemic encephalitis	3	3	6	3.14	9.16	6.15
With other infectious diseases	—	2	2	—	.97	.97
Alcoholic psychoses	89	13	102	10.64	4.94	9.91
Due to drugs, etc.	1	—	1	4.50	—	4.50
Traumatic psychoses	7	1	8	2.34	12.50	3.61
With cerebral arteriosclerosis	73	70	143	2.52	2.96	2.74
With other disturbances of circulation	4	—	4	2.23	—	2.23
With convulsive disorders (epilepsy)	5	3	8	7.88	8.48	8.11
Senile psychoses	22	51	73	3.93	4.48	4.32
Involuntional psychoses	12	35	47	6.82	7.97	7.68
Due to other metabolic diseases, etc.	6	5	11	3.15	7.07	5.21
With organic changes of nervous system	8	8	16	3.63	5.98	4.80
Psychoneuroses	7	2	9	1.44	13.97	4.23
Manic-depressive psychoses	8	16	24	11.74	8.30	9.45
Dementia praecox	377	398	775	12.22	12.69	12.46
Paranoia and paranoid conditions	20	40	60	9.21	12.47	11.38
With psychopathic personality	5	8	13	18.50	13.49	15.41
With mental deficiency	53	48	101	10.17	12.08	11.08
Undiagnosed psychoses	—	1	1	—	.44	.44
Without psychoses	4	1	5	.70	.44	.65
Primary behavior disorders	1	1	2	.44	.44	.44
Total	795	745	1,540	9.40	10.21	9.79

TABLE 19A. *Average Length of Hospital Residence During the Present Admission of Readmissions in Residence on September 30, 1939*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	26	8	34	7.07	7.12	7.08
With other forms of syphilis	—	3	3	—	5.50	5.50
With epidemic encephalitis	4	3	7	5.00	10.83	7.50
With other infectious diseases	—	2	2	—	6.50	6.50
Alcoholic psychoses	44	3	47	7.43	10.83	7.64
Due to drugs, etc.	—	1	1	—	22.50	22.50
Traumatic psychoses	1	1	2	12.50	.50	6.50
With cerebral arteriosclerosis	14	18	32	6.35	4.50	5.31
With convulsive disorders (epilepsy)	8	3	11	7.25	3.83	6.31
Senile psychoses	3	12	15	5.83	5.58	5.64
Involuntional psychoses	6	12	18	5.33	6.75	6.28
Due to other metabolic diseases, etc.	1	—	1	12.50	—	12.50
Due to new growth	—	1	1	—	.50	.50
With organic changes of nervous system	4	5	9	8.25	2.90	5.27
Psychoneuroses	5	4	9	4.50	7.00	5.61
Manic-depressive psychoses	25	37	62	8.42	9.25	8.91
Dementia praecox	232	289	521	11.10	10.95	11.02
Paranoia and paranoid conditions	5	17	22	10.50	9.85	10.00
With psychopathic personality	4	6	10	6.50	7.66	7.20
With mental deficiency	32	33	65	10.40	10.74	10.57
Without psychoses	4	3	7	2.25	2.83	2.50
Total	418	461	879	9.60	9.85	9.73

TABLE 20. *Family Care Statistics for Year Ended September 30, 1939*

	Males	Females	Total
Remaining in Family Care September 30, 1938	33	75	108
On Visit from Family Care September 30, 1938	5	12	17
Admitted to Family Care During the Year	64	117	181
Whole Number of Cases within the Year	97	192	289
Discharged from Family Care within the Year:	53	95	148
Discharged outright	3	8	11
From Family Care to Escape Status	4	2	6
From Family Care to Visit Status	15	29	44
Returned to Institution	31	56	87
Returned to Institution from Escape	4	2	6
Returned to Institution from Visit	5	16	21
Remaining in Family Care September 30, 1939	44	97	141
On Visit from Family Care September 30, 1939	8	12	20
Average Daily Number in Family Care During Year:	42.33	89.42	131.75
Supported by State	37	69	106
Reimbursing	—	1	1
Private	7	27	34

